

EIC 1700 / LUTRELLE F. PARKER LAW LIBRARY



*Scientific and Technical Information Center*

## Search Results Feedback Form

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact the searcher whose name is circled below.

Kathleen Fuller

Eric Linnell

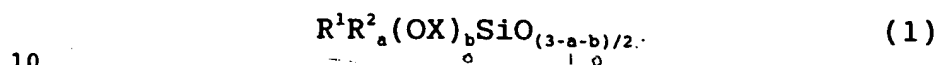
John Caive

All searchers are located in the library in CP3/4 3D62

## CLAIMS:

315,  
324

1. A surface treatment agent which, when applied to a substrate prior to formation of a resist pattern thereon, strengthens adhesion between the substrate and the resist pattern, the surface treatment agent comprising at least one compound of the following compositional formula:



- wherein  $R^1$  is a  $-(CH_2)_n Y$  moiety in which Y is epoxycyclohexyl, glycidoxy, N- $\beta$ -aminoethylamino, amino, N-phenylamino, mercapto or isocyanate, and n is an integer from 0 to 4;  $R^2$  is a monovalent hydrocarbon group of 1 to 4 carbons; X is hydrogen or a monovalent hydrocarbon group of 1 to 4 carbons; "a" is 0 or 1, and "b" is 0, 1 or 2 when "a" is 0, and "b" is 0 or 1 when "a" is 1.

2. The surface treatment agent of claim 1, wherein the compound of compositional formula (1) is prepared by hydrolyzing a silane of general formula (2):



- wherein  $R^1$ ,  $R^2$  and "a" are as defined above; Z is a monovalent hydrocarbon group of 1 to 4 carbons; and "c" is a number which satisfies the condition  $a+c = 3$ .

3. The surface treatment agent of claim 1, wherein  $R^1$  is selected from the group consisting of  $\beta$ -(3,4-epoxycyclohexyl)ethyl,  $\gamma$ -aminopropyl,  $\gamma$ -mercaptopropyl,  $\gamma$ -isocyanatepropyl, N- $\beta$ -(aminoethyl)- $\gamma$ -aminopropyl,  $\gamma$ -glycidoxypropyl and N-phenyl- $\gamma$ -aminopropyl.

4. A patterning process comprising the steps of applying the surface treatment agent of claim 1 to a substrate and baking, then applying thereon a photoresist composition and patterning the photoresist.

5. The patterning process of claim 4, wherein the substrate is a metal or metal oxide substrate.

6. The patterning process of claim 5, wherein the metal  
5 or metal oxide making up the substrate is aluminum, iron,  
nickel, copper, tantalum, gold, or an oxide thereof.

=> file reg

FILE 'REGISTRY' ENTERED AT 18:05:09 ON 15 MAY 2002

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP.USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2002 American Chemical Society (ACS)

STRUCTURE FILE UPDATES: 14 MAY 2002 HIGHEST RN 415894-77-8

DICTIONARY FILE UPDATES: 14 MAY 2002 HIGHEST RN 415894-77-8

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES  
for more information. See STNote 27, Searching Properties in the CAS  
Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d his

(FILE 'HCAPLUS' ENTERED AT 16:23:07 ON 15 MAY 2002)

DEL HIS Y

L1 31585 S FUJII ?/AU

L2 66562 S KATO ?/AU

L3 711 S L1 AND L2

L4 7977 S FUJII T?/AU

L5 8262 S KATO H?/AU

L6 20 S L4 AND L5

L7 69162 S RESIST OR RESISTS OR PHOTORESIST?

L8 6 S L6 AND L7

SEL L8 1-6 RN

FILE 'REGISTRY' ENTERED AT 16:26:46 ON 15 MAY 2002

L9 26 S E1-E26

L10 4 S L9 AND SI/ELS

E SILICA/CN

L11 1 S E3

L12 3 S L10 NOT L11

FILE 'HCAPLUS' ENTERED AT 16:30:12 ON 15 MAY 2002

L13 90 S L12

L14 1 S L13 AND L7

L15 990221 S PATTERN? OR DESIGN OR DESIGNS OR DESIGNED OR DESIGNING#

L16 5 S L13 AND L15

FILE 'LCA' ENTERED AT 16:33:44 ON 15 MAY 2002

L17 10450 S (SUBSTRAT? OR SURFACE? OR BASE# OR SUBSTRUCT? OR UNDERS

L18 16425 S (TREAT? OR PRETREAT? OR CONDITION? OR PRECONDITION? OR

FILE 'HCAPLUS' ENTERED AT 16:36:55 ON 15 MAY 2002

L19 172333 S L18(2A)L17  
L20 7 S L13 AND L19

FILE 'REGISTRY' ENTERED AT 16:40:58 ON 15 MAY 2002  
ACT SAG001/Q

L21 STR

L22 50 S L21  
L23 6214 S L21 FUL  
DEL SAG001/Q  
SAV TEM L23 SAG001/A

FILE 'LREGISTRY' ENTERED AT 16:59:37 ON 15 MAY 2002

L24 STR L21

FILE 'REGISTRY' ENTERED AT 17:03:57 ON 15 MAY 2002

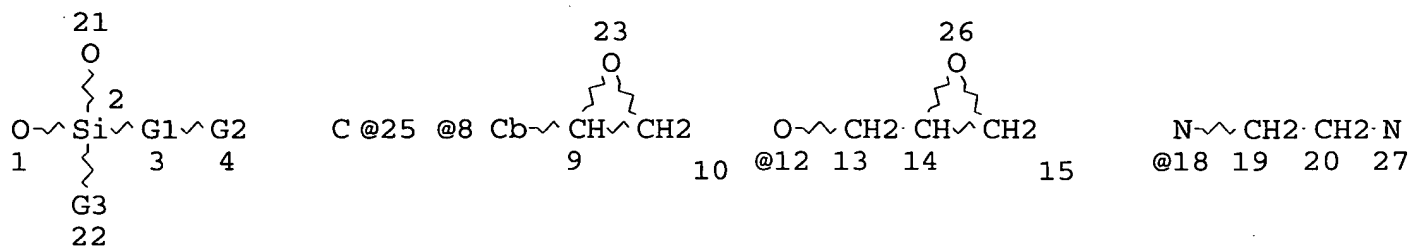
L25 50 S L24 SSS SAM SUB=L23  
L26 STR L24  
L27 50 S L26 SSS SAM SUB=L23  
L28 2792 S L26 SSS FUL SUB=L23  
SAV L28 SAG001A/A  
L29 1543 S L28 NOT 2<NC  
L30 609 S L28 NOT N/ELS

FILE 'HCAPLUS' ENTERED AT 17:19:25 ON 15 MAY 2002

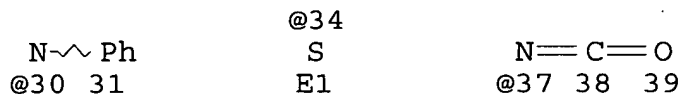
L31 3011 S L30  
L32 8543 S L29  
L33 9057 S L28  
L34 21288 S L23  
L35 27 S L31 AND L7  
L36 9 S L35 AND (L15 OR L19)  
L37 113 S L32 AND L7  
L38 54 S L37 AND (L15 OR L19)  
L39 7 S L37 AND L15 AND L19  
L40 7 S L33 AND L7 AND L15 AND L19  
L41 15 S L34 AND L7 AND L15 AND L19  
L42 23 S L14 OR L16 OR L20 OR L36 OR L39 OR L40  
L43 8 S L41 NOT L42

FILE 'REGISTRY' ENTERED AT 18:05:09 ON 15 MAY 2002

=> d l23 que stat  
L21 STR



Page 1-A



Page 1-B

REP G1=(0-4) CH2

VAR G2=8/12/18/NH2/30/34/37

VAR G3=O/25

NODE ATTRIBUTES:

HCOUNT IS E1 AT 34

NSPEC IS RC AT 25

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE

L23 6214 SEA FILE=REGISTRY SSS FUL L21

100.0% PROCESSED 80728 ITERATIONS

6214 ANSWERS

SEARCH TIME: 00.00.11

=&gt; file hcplus

FILE 'HCAPLUS' ENTERED AT 18:06:27 ON 15 MAY 2002

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching

databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 15 May 2002 VOL 136 ISS 20  
FILE LAST UPDATED: 14 May 2002 (20020514/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001.. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d 142 1-23 cbib abs hitstr hitind

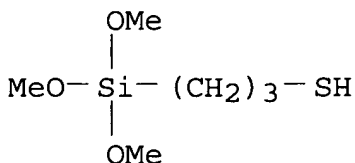
L42 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
2002:169372 Document No. 136:220632 Method of forming metal film **pattern** on glass substrate. Hayashi, Shigehiko; Iwamoto, Masahiro; Kuroda, Kotaro; Igarashi, Tetsuya (Mitsuboshi Belting Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002068782 A2 20020308, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-258425 ; 20000829.

AB The process comprises the steps of (1) covering an area where a **pattern** will not be formed with a **resist** film, (2) **surface-treating** with a silane coupling agent having a functional group selected from mercapto, amino, cyano, amido, and ureido, (3) fixing metal particles on the glass substrate via the silane coupling agent on the surface, (4) electroless-plating with a metal, and (5) removing the **resist pattern**.

IT 4420-74-0, 3-Mercaptopropyltrimethoxysilane  
(method of forming metal film **pattern** on glass substrate)

RN 4420-74-0 HCAPLUS

CN 1-Propanethiol, 3-(trimethoxysilyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM C03C017-38

ICS C23C018-18; C23C018-31

CC 57-1 (Ceramics)

Section cross-reference(s): 42

IT Coating process

(electroless; method of forming metal film **pattern** on glass substrate)

IT 7440-57-5, Gold, processes  
(method of forming metal film **pattern** on glass substrate)

IT 60676-86-0, Quartz glass  
(method of forming metal film **pattern** on glass substrate)

IT 4420-74-0, 3-Mercaptopropyltrimethoxysilane 7440-02-0,  
Nickel, uses 138988-79-1, Microposit XP 90104A 273204-64-1,  
Microposit S 1808  
(method of forming metal film **pattern** on glass substrate)

L42 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
2002:169356 Document No. 136:220624 Manufacture of optical devices with convex lenses on glass substrates by sol-gel process using mask **patterns**. Yokoyama, Masaaki; Sakurai, Yoshiaki; Nagayama, Tomoo (Japan). Jpn. Kokai Tokkyo Koho JP 2002068755 A2 20020308, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-265163 20000901.

AB The process involves (A) forming layers of organosilicon resins, preferably polysilanes, on glass substrates, (B) irradiating radiation on the layers selectively on regions where convex lenses are to be formed, (C) bringing the layers into contact with liq. gels of the convex lens-forming glass compns. to deposit the gels selectively on the irradiated regions, and (D) drying the deposited liq. gels and heating the obtained dry gels for vitrification. Between the steps of C and B, the liq. gel-deposited glass substrates may be brought into contact with solns. contg. metals, org. acids, or inorg. acids or water to control refractive indexes of the resulting lenses. The radiation may be electron beam, x-ray, or UV. The liq.gel may be prepd. from .gtoreq.1 metal alkoxides. The optical devices may be microlens arrays for charge coupled devices (CCD), etc.

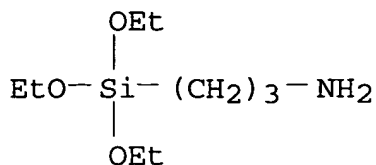
IT 29159-37-3P, 3-Aminopropyltriethoxysilane homopolymer  
(manuf. of microlenses by sol-gel process using mask **patterns** of organosilicon resins)

RN 29159-37-3 HCAPLUS  
CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 919-30-2  
CMF C9 H23 N O3 Si



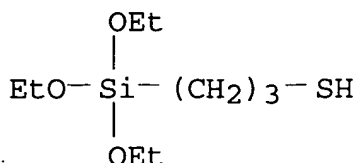


- IC ICM C03B008-02  
ICS G02B003-00
- CC 57-1 (Ceramics)  
Section cross-reference(s): 73
- ST optical lense convex sol gel lithog; microlens array manuf sol gel lithog; polysilane **pattern** sol gel microlens device; silica gel polysilane **pattern** microlens array
- IT Polysilanes  
(fluorine-contg.; manuf. of microlenses by sol-gel process using mask **patterns** of)
- IT Microlenses  
Photolithography  
Sol-gel processing  
(manuf. of microlenses by sol-gel process using mask **patterns**)
- IT Polysilanes  
(manuf. of microlenses by sol-gel process using mask **patterns** of)
- IT Fluoropolymers, uses  
(polysilane-; manuf. of microlenses by sol-gel process using mask **patterns** of)
- IT 31324-77-3 402496-26-8  
(manuf. of microlenses by sol-gel process using mask **patterns** of)
- IT 11099-06-2P, Tetraethoxysilane homopolymer 29159-37-3P,  
3-Aminopropyltriethoxysilane homopolymer  
(manuf. of microlenses by sol-gel process using mask **patterns** of organosilicon resins)
- L42 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
2002:56848 Document No. 136:126537 Method for **pattern**  
formation using organic self-assembled monolayer and UV light and  
method for forming organic self-assembled monolayers therefor.  
Ishida, Masaya (Seiko Epson Corp., Japan). Jpn. Kokai Tokkyo Koho  
JP 2002019008 A2 20020122, 5 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2000-202200 20000704.
- AB The title method includes the steps of: forming a first org.  
self-assembled monolayer of .ltoreq.3 nm thickness on a substrate;  
and forming a second org. self-assembled monolayer having different  
functional groups from the first org. self-assembled monolayer. The  
method, which has the two monolayers instead of one monolayer,  
provides the photomask which shortening the exposure time for  
**patterning**.
- IT 14814-09-6

(monolayer material for forming org. self-assembled monolayers)

RN 14814-09-6 HCAPLUS

CN 1-Propanethiol, 3-(triethoxysilyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM B32B009-00

ICS B05D001-36; B05D003-06; G03F007-004; G03F007-20; G03F007-36;  
H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

ST **patterning** org self assembled monolayer

IT Light-sensitive materials

**Resists**

Self-assembled monolayers

(method for **patterning** using org. self-assembled

monolayer and method for forming org. self-assembled monolayer)

IT **14814-09-6** 101947-16-4, Heptadecafluoro-1,1,2,2-

tetrahydrodecyltriethoxysilane

(monolayer material for forming org. self-assembled monolayers)

L42 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2002 ACS

2001:864938 Document No. 136:12840 Photosensitive composition  
containing adhesive aid. Kasumi, Kenichi; Yumiba, Tomoyuki;  
Fujimoto, Koji (Toray Industries, Inc., Japan). Jpn. Kokai Tokkyo  
Koho JP 2001330962 A2 20011130, 10 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2000-146224 20000518.

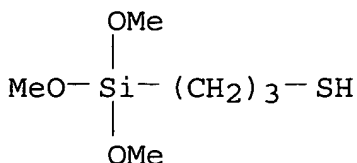
AB The compn., comprising a polymer, an adhesive aid with metals, and a  
photosensitive agent, is coated on a metal foil, pre-baked,  
imagewise exposed to form **patterns** and has av. heat linear  
expansion coeff. .ltoreq.25 .times. 10-6(/.degree., at  
30-100.degree.) after curing. The compn. shows good adhesion with  
metals and clear **patterns** are formed.

IT **4420-74-0**

(photosensitive compn. contg. adhesive aid)

RN 4420-74-0 HCAPLUS

CN 1-Propanethiol, 3-(trimethoxysilyl)- (7CI, 8CI, 9CI) (CA INDEX  
NAME)



IC ICM G03F007-085  
ICS C08K005-34; C08K005-36; C08L101-00; G03F007-037; G03F007-038;  
G03F007-40; H01L021-027; H01L021-312

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 38

ST **photoresist** adhesive aid metal surface; linear expansion  
coeff **photoresist** polyamide

IT **Photoresists**  
(photosensitive compn. contg. adhesive aid)

IT 66-71-7, 1,10-Phenanthroline 95-14-7, 1,2,3-Benzotriazole  
120-78-5, Dibenzothiazyl disulfide 148-24-3, 8-Quinolinol, uses  
149-30-4, 2-Mercaptobenzothiazole 288-94-8, 1H-Tetrazole  
**4420-74-0** 13733-91-0, 2-Anilino-4,6-dimercapto-s-triazine  
(photosensitive compn. contg. adhesive aid)

L42 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
2001:582290 Document No. 135:160159 **Surface**  
**treatment** agent for **resist pattern**, and  
**patterning** process. Fujii, Toshihiko; Kato, Hideto (Japan).  
U.S. Pat. Appl. Publ. US 20010012601 A1 20010809, 4 pp.  
(English). CODEN: USXXCO. APPLICATION: US 2001-772001 20010130.  
PRIORITY: JP 2000-21103 20000131.

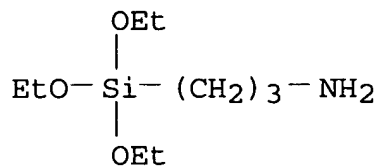
AB A **surface treatment** agent comprises an  
oligomeric or polymeric silicon-contg. compd. having an  
epoxycyclohexyl, glycidoxy, N-.beta.-aminoethylamino, amino,  
N-phenylamino, mercapto or isocyanate group. When the  
**surface treatment** agent is applied to a metal or  
metal oxide substrate prior to formation of a **resist**  
**pattern** thereon, it serves to strengthen adhesion between  
the substrate and the **photoresist** film.

IT **29159-37-3P**, .gamma.-Aminopropyltriethoxysilane polymer  
**191093-22-8P**, 3-Aminopropyltriethoxysilane-3-  
Mercaptopropyltriethoxysilane copolymer **352668-65-6P**  
(**surface treatment** agent; Si-contg. compd.  
**surface treatment** agent for **resist**  
**patterning**)

RN 29159-37-3 HCAPLUS  
CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX  
NAME)

CM 1

CRN 919-30-2  
CMF C9 H23 N O3 Si



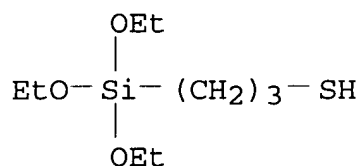
RN 191093-22-8 HCAPLUS

CN 1-Propanethiol, 3-(triethoxysilyl)-, polymer with  
3-(triethoxysilyl)-1-propanamine (9CI) (CA INDEX NAME)

CM 1

CRN 14814-09-6

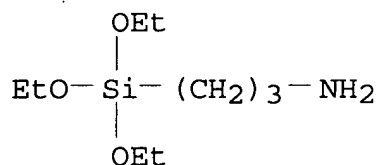
CMF C9 H22 O3 S Si



CM 2

CRN 919-30-2

CMF C9 H23 N O3 Si



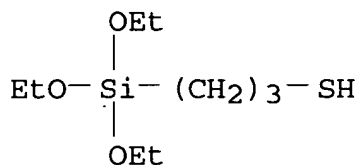
RN 352668-65-6 HCAPLUS

CN 1-Propanethiol, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX  
NAME)

CM 1

CRN 14814-09-6

CMF C9 H22 O3 S Si



- IC ICM G03C005-00  
 NCL 430322000  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 35, 38, 76  
 ST **photoresist patterning** silicon oligomeric  
 adhesion **surface treatment** agent  
 IT Photolithography  
**Photoresists**  
 (Si-contg. compd. **surface treatment** agent for  
**resist patterning**)  
 IT 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses  
 (substrate; Si-contg. compd. **surface treatment**  
 agent for **resist patterning**)  
 IT 29159-37-3P, .gamma.-Aminopropyltriethoxysilane polymer  
 191093-22-8P, 3-Aminopropyltriethoxysilane-3-  
 Mercaptopropyltriethoxysilane copolymer 352668-65-6P  
 (**surface treatment** agent; Si-contg. compd.  
**surface treatment** agent for **resist**  
**patterning**)
- L42 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
 2001:354321 Document No. 135:93330 On the properties of an ion  
 conductive system incorporated in hybrid films. Gonzalez, G.;  
 Retuert, P. J.; Fuentes, S. (Departments of Chemistry, Faculty of  
 Science, Universidad de Chile, Santiago, Chile). Materials Research  
 Society Symposium Proceedings, 628(Organic/Inorganic Hybrid  
 Materials), CC6.19.1-CC6.19.6 (English) 2001. CODEN: MRSPDH. ISSN:  
 0272-9172. Publisher: Materials Research Society.
- AB Blending the biopolymer chitosan (CHI) with  
 poly(aminopropylsiloxane) oligomers (pAPS), and poly(ethylene oxide)  
 (PEO) in the presence of lithium perchlorate lead to ion conducting  
 products whose cond. depends on the compn. of the mixt. A ternary  
 phase diagram for mixts. contg. 0.2 M LiClO4 shows a zone in which  
 the phys. properties of the products - transparent, flexible, mech.  
 robust films - indicate a high degree of mol. compatibilization of  
 the components. Comparison of these films with binary CHI-pAPS  
 nanocomposites as well as the microscopic aspect, thermal behavior,  
 and X-ray diffraction **pattern** of the product with the  
 compn. PEO/CHI/pAPS/LiClO4 1:0.5:0.6:0.2 molar ratio indicates that  
 these films may be described as a layered nanocomposite. In this  
 composite, lithium species coordinated by PEO and pAPS should be  
 inserted into chitosan layers. Electrochem. impedance spectroscopy  
 measurements indicate the films are pure ionic conductors with a

maximal bulk cond. of 1.7.times.10<sup>-5</sup> Scm<sup>-1</sup> at 40.degree.C and a sample-electrode interface capacitance of about 1.2.times.10<sup>-9</sup> F.

IT 29159-37-3, 3-Aminopropyltriethoxysilane homopolymer  
(properties of poly(ethylene oxide)-chitosan-aminopropyl  
silsesquioxane-lithium perchlorate ionic conductive system)

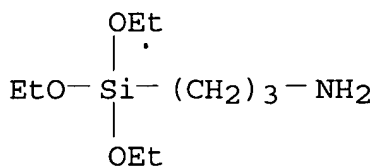
RN 29159-37-3 HCAPLUS

CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 919-30-2

CMF C9 H23 N O3 Si



CC 37-5 (Plastics Manufacture and Processing)  
Section cross-reference(s): 44

IT 7439-93-2D, Lithium, complexes with poly(ethylene oxide), properties  
9012-76-4, Chitosan 25322-68-3D, Poly(ethylene oxide), lithium  
complexes 29159-37-3, 3-Aminopropyltriethoxysilane  
homopolymer 161376-90-5, 3-Aminopropyltriethoxysilane homopolymer  
ladder sru  
(properties of poly(ethylene oxide)-chitosan-aminopropyl  
silsesquioxane-lithium perchlorate ionic conductive system)

L42 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
2000:386597 Document No. 133:44462 Relationship between Composition  
and Structure in Chitosan-based Hybrid Films. Fuentes, S.; Retuert,  
P. J.; Ubilla, A.; Fernandez, J.; Gonzalez, G. (Department of  
Chemistry Faculty of Science, University of Chile, Santiago, Chile).  
Biomacromolecules, 1(2), 239-243 (English) 2000. CODEN: BOMAF6.  
ISSN: 1525-7797. Publisher: American Chemical Society.

AB Chitosan/poly(aminopropylsiloxane) hybrid films were obtained by  
blending 3-(aminopropyl)siloxane oligomers (pAPS) with chitosan  
(CHI). The pAPS oligomers were prepd. by the sol-gel method  
starting from 3-(aminopropyl)triethoxysilane. These hybrids were  
characterized by chem., spectroscopic and morphol. methods.  
Scanning electron micrographs of hybrid films of different compn.  
revealed an organized microscopic **pattern** suggesting the  
existence of systematic interactions among their components.  
Comparison of the thermal stabilities and X-ray diffraction  
**patterns** as well as FT-IR spectra of the films with those of  
the pure components revealed that nanocomposites were formed.  
Similar studies of films including lithium perchlorate, as a third  
component, showed that addn. of certain amt. of lithium ions

affected the structure of the CHI/pAPS films. When addn. of the lithium salt exceeded the homogeneous incorporation limit, a little excess generated anisotropically oriented **patterns** in the hybrid films.

IT 29159-37-3, 3-(Aminopropyl)triethoxysilane homopolymer  
(relationship between compn. and structure in chitosan-based hybrid films)

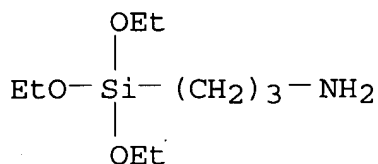
RN 29159-37-3 HCAPLUS

CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 919-30-2

CMF C9 H23 N O3 Si



CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 44

IT 9012-76-4, Chitosan 29159-37-3, 3-(Aminopropyl)triethoxysilane homopolymer

(relationship between compn. and structure in chitosan-based hybrid films)

L42 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2002 ACS

1998:498147 Document No. 129:217996 Surface modification methods for water and oil repellency. Kai, Yoshiaki (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10204421 A2 19980804 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-12193 19970127.

AB **Substrates** are **treated** with F-free silane coupling agents and F-contg. carboxylic acid halides. Thus, soda glass was treated with bis(2-hydroxyethyl)-3-aminopropyltriethoxysilane hydrolyzate and acid chloride of Krytox 157FSH.

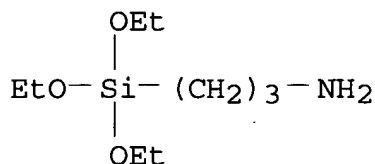
IT 29159-37-3DP, Poly(3-aminopropyltriethoxysilane), reaction products with perfluorohexyldecanoic acid chloride (water- and oil-repellent coatings on glass and ceramics and metals and plastics)

RN 29159-37-3 HCAPLUS

CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 919-30-2  
CMF C9 H23 N O3 Si



- IC ICM C09K003-18  
ICS C03C017-32; C04B041-83
- CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 55, 56, 57
- IT **29159-37-3DP**, Poly(3-aminopropyltriethoxysilane), reaction products with perfluorohexyldecanoic acid chloride 29226-47-9DP, reaction products with perfluorostearic acid chloride 90168-44-8DP, reaction products with perfluoropolyoxyalkylene carboxylic acid chloride 146221-69-4DP, reaction products with bis(hydroxyethyl)aminopropyltriethoxysilane hydrolyzate 212139-97-4DP, reaction products with aminopropyltriethoxysilane hydrolyzates 212140-00-6DP, reaction products with (aminoethyl)aminopropyltrimethoxysilane hydrolyzates 212140-02-8DP, reaction products with perfluoro(methyldimethylbutyl)methyldimethyloctanoic acid chloride 212140-03-9DP, reaction products with aminophenyltrimethoxysilane hydrolyzates (water- and oil-repellent coatings on glass and ceramics and metals and plastics)
- L42 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
1997:154648 Document No. 126:164265 Photosolder **resist** composition containing photocurable resin and silicone prepolymer. Kubota, Hiroyuki (Toyo Ink Mfg Co, Japan). Jpn. Kokai Tokkyo Koho JP 08320564 A2 19961203 Heisei, 9 PP. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-126174 19950525.
- AB The compn. contains (A) a resin contg. CO<sub>2</sub>H and alc. OH which is cured by irradiation with active rays and (B) a silicone prepolymer. (B) is preferably a condensate and/or partial condensate having .gtoreq.1 functional group selected from vinyl, amino, mercapto, epoxy, and (meth)acryloyl groups. (A) preferably contains (A1) adducts of (a) an unsatd. monocarboxylic acid polymer or its copolymer with other ethylenic compd. with (b) a compd. having an epoxy group and .gtoreq.1 ethylenic bond and (A2) half esters of (c) a homopolymer of an unsatd. polybasic acid or its anhydride their copolymer with other ethylenic compd. with (d) a monohydric alc. having ethylenic bond or a polyhydric alc. having no ethylenic bond. The **resist** compn., useful for manuf. of printed circuit boards, provides insulating **patterns** with good resistance to heat, chems., water, moisture, and solvents, and. (A) is previously treated with (B) in part.
- IT **168269-79-2P**



(photosolder **resist** compn. contg. photocurable resin  
and silicone prepolymer)

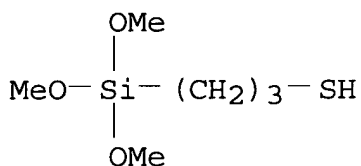
RN 168269-79-2 HCAPLUS

CN 1-Propanethiol, 3-(trimethoxysilyl)-, polymer with  
trimethoxymethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 4420-74-0

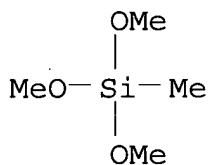
CMF C6 H16 O3 S Si



CM 2

CRN 1185-55-3

CMF C4 H12 O3 Si



IT 186546-51-0P

(photosolder **resist** compn. contg. photocurable resin  
and silicone prepolymer)

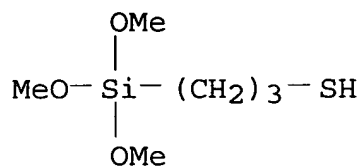
RN 186546-51-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
oxiranylmethyl 2-methyl-2-propenoate, 2-propenoic acid,  
trimethoxymethylsilane and 3-(trimethoxysilyl)-1-propanethiol (9CI)  
(CA INDEX NAME)

CM 1

CRN 4420-74-0

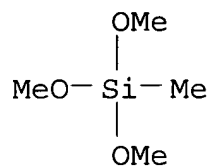
CMF C6 H16 O3 S Si



CM 2

CRN 1185-55-3

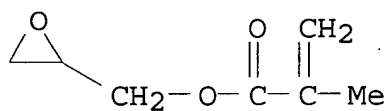
CMF C4 H12 O3 Si



CM 3

CRN 106-91-2

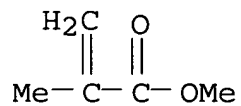
CMF C7 H10 O3



CM 4

CRN 80-62-6

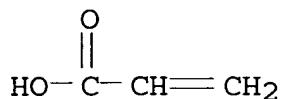
CMF C5 H8 O2



CM 5

CRN 79-10-7

CMF C3 H4 O2



- IC ICM G03F007-075  
ICS G03F007-038; H05K003-06
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST solder **photoresist** photocurable resin; silicone prepolymer  
solder **photoresist**; photosolder **resist**  
photocurable resin
- IT Silsesquioxanes  
(Me Ph; photosolder **resist** compn. contg. photocurable resin and silicone prepolymer)
- IT Solder **resists**  
(**photoresists**; photosolder **resist** compn. contg. photocurable resin and silicone prepolymer)
- IT Silsesquioxanes  
(photosolder **resist** compn. contg. photocurable resin and silicone prepolymer)
- IT **Photoresists**  
(solder; photosolder **resist** compn. contg. photocurable resin and silicone prepolymer)
- IT 54465-31-5P 162816-07-1P, Methyltrimethoxysilane-phenyltrimethoxysilane copolymer **168269-79-2P**  
(photosolder **resist** compn. contg. photocurable resin and silicone prepolymer)
- IT 156637-69-3P 186546-50-9P **186546-51-0P** 186546-53-2P  
186708-37-2P  
(photosolder **resist** compn. contg. photocurable resin and silicone prepolymer)
- IT 9005-12-3, Poly[oxy(methylphenylsilylene)]  
(photosolder **resist** compn. contg. photocurable resin and silicone prepolymer)
- L42 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
1996:642823 Document No. 126:97499 Fabrication and packaging of mesa ISFETs. van Hal, R. E. G.; Bergveld, P.; Engbersen, J. F. J. (MESA Research Institute, University Twente, Enschede, 7500, Neth.). Sens. Mater., 8(7), 455-468 (English) 1996. CODEN: SENMER. ISSN: 0914-4935. Publisher: Scientific Publishing Division of MYU K.K..
- AB A novel three-dimensional structure for the ISFET is developed, which simplifies the encapsulation procedure and enables flat packaging. The chem. and elec. characteristics of the ISFET are unchanged by the new structure. The ISFET is encapsulated in a self-aligning process with a Kapton foil by polymer bonding, while at the same time, the source and drain pads are connected to the preprocessed copper leads on the Kapton foil.
- IT **29159-37-3D**, 3-Aminopropyl triethoxysilane homopolymer,

oligomerized

(silica **surface treatment** agent; fabrication  
and packaging of mesa ISFETs)

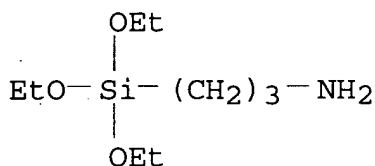
RN 29159-37-3 HCAPLUS

CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX  
NAME)

CM 1

CRN 919-30-2

CMF C9 H23 N O3 Si



CC 76-3 (Electric Phenomena)

IT **29159-37-3D**, 3-Aminopropyl triethoxysilane homopolymer,  
oligomerized  
(silica **surface treatment** agent; fabrication  
and packaging of mesa ISFETs)

L42 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2002 ACS

1995:744365 Document No. 123:145576 Surface modification of glass  
fibers by silane coupling agents and its effect on the strength of  
the interfacial boundary and properties of polypropylene  
glass-reinforced plastics. Zelentskii, A. N.; Gorbatkina, Yu. A.;  
Kuperman, A. M.; Pirogov, O. N.; Tovmasyan, M. A.; Denisov, K. A.;  
Vasil'ev, I. A. (Semenov Inst. Chem. Physics, Russian Acad. Sci.,  
Moscow, 117977, Russia). Vysokomol. Soedin., Ser. A Ser. B, 37(5),  
775-80 (Russian) 1995. CODEN: VSSBEE.

AB Ozonometry was used for quant. anal. of functional groups forming on  
the surface of glass fibers as a result of the condensation polymn.  
of silane coupling agents. A setup was built and technique for  
ozonometric measurements was developed. The method was used to  
investigate the surface of glass fibers modified by vinyl- and  
aminosilanes. Anal. showed that the best results are achieved by  
**treating** the **surface** with vinyltriethoxysilane.

In this case, coupling between the glass fibers and the  
polypropylene matrix and the toughness of polypropylene composites  
increase.

IT **29159-37-3**, .gamma.-Aminopropyltriethoxysilane homopolymer  
(surface modification of glass fibers by silane coupling agents  
and its effect on properties of reinforced polypropylene)

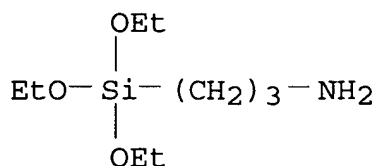
RN 29159-37-3 HCAPLUS

CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX  
NAME)

CM 1

CRN 919-30-2

CMF C9 H23 N O3 Si



CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

IT **29159-37-3**, .gamma.-Aminopropyltriethoxysilane homopolymer  
 29434-25-1, Triethoxyvinylsilane homopolymer  
 (surface modification of glass fibers by silane coupling agents  
 and its effect on properties of reinforced polypropylene)

L42 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2002 ACS

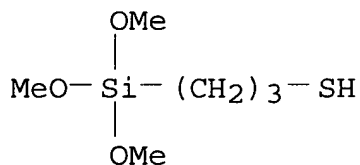
1995:705333 Document No. 123:97953 Disulfide-containing organic  
 silane-modified surface for photo-**patterning**. Ichinose,  
 Nobuyuki (Shingijutsu Kaihatsu Jigyodan, Japan). Jpn. Kokai Tokkyo  
 Koho JP 07084371 A2 19950331 Heisei, 4 pp. (Japanese). CODEN:  
 JKXXAF. APPLICATION: JP 1993-232082 19930917.

AB Disulfide org. group-substituted silanes are adsorbed on a surface  
 via O bonds and the disulfide org. groups are capable of cleaving  
 upon photoirradn. The above silanes are prepd. by reacting mercapto  
 group substituted silane derivs. with sulfenic acid halide or  
 disulfide compd.

IT **4420-74-0**, 3-Mercaptopropyltrimethoxysilane  
 (monolayer film from)

RN 4420-74-0 HCAPLUS

CN 1-Propanethiol, 3-(trimethoxysilyl)- (7CI, 8CI, 9CI) (CA INDEX  
 NAME)



IC ICM G03F007-075

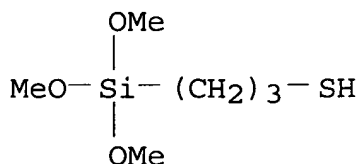
ICS G03F007-26

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 76

ST monolayer film **photoresist** disulfide silane

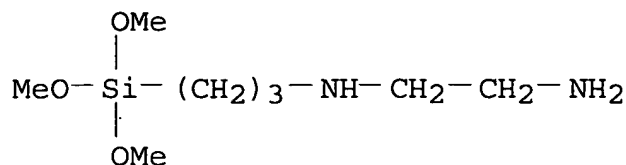
IT Molecular electronic devices

- (disulfide-contg. org. silane-modified oxidized surface for photo-**patterning**)
- IT **Resists**  
(photo-, disulfide-contg. org. silane-modified oxidized surface for photo-**patterning**)
- IT 882-33-7, Diphenyldisulfide **4420-74-0**,  
3-Mercaptopropyltrimethoxysilane  
(monolayer film from)
- L42 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
1995:604470 Document No. 123:22405 Oxides modified with organosilane compounds having acylalkyl sulfide linkage, their preparation, and photopatterned surface of the oxides. Ichinose, Nobuyuki (Shingijutsu Kaihatsu Jigyodan, Japan). Jpn. Kokai Tokkyo Koho JP 07084372 A2 19950331 Heisei, 3 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-232055 19930917.
- AB The oxides have a monomol. layer of silane substituted with org. group having acylalkyl sulfide linkage. The modified oxides are prepd. by coating of surface of solid oxides with a monomol. layer of silane substituted with SH group followed by acylalkylation. **Patterned** oxides, where the acylalkyl groups are cleaved by **patternwise** irradiation, is also claimed. **Patterned** oxide, where amino polymer mols. are bound to the unirradiated part, is also claimed. The organosilane monolayer can be **patterned** by generally-used near-UV light irradiation. app. and the surface further modified with peptides and aminopolymers, e.g. proteins, through the organosilane are useful for ultra-thin-layer **photoresists**, mol. devices, biosensors, and biocompatible materials. A quartz **substrate** was **treated** with (MeO)<sub>3</sub>Si(CH<sub>2</sub>)<sub>3</sub>SH followed by ICH<sub>2</sub>CO<sub>2</sub>H or maleic anhydride to give modified surface, which was **patternwise** irradiated with KrF excimer laser and further treated with poly(ethyleneimine) to give its **pattern**.
- IT **4420-74-0**, (3-Mercaptopropyl)trimethoxysilane  
(quartz coating with; photopatterning of oxide surface coated with organosilane having acylalkyl sulfide linkage and modification of the surface with aminopolymers for electronic devices and biocompatible materials)
- RN 4420-74-0 HCAPLUS
- CN 1-Propanethiol, 3-(trimethoxysilyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



- IC ICM G03F007-075  
ICS G03F007-075

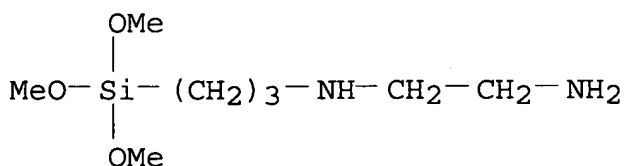
- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 29, 66
- ST oxide photopatterning silane coupling agent; acylalkyl sulfide linkage coupling agent; aminopolymer **patternwise** fixation coupling agent; protein **patternwise** immobilization coupling agent
- IT Oxides, **processes**  
(**substrates**; photopatterning of oxide surface coated with organosilane having acylalkyl sulfide linkage and modification of the surface with aminopolymers for electronic devices and biocompatible materials)
- IT 4420-74-0, (3-Mercaptopropyl)trimethoxysilane  
(quartz coating with; photopatterning of oxide surface coated with organosilane having acylalkyl sulfide linkage and modification of the surface with aminopolymers for electronic devices and biocompatible materials)
- IT 7631-86-9, Silica, **processes**  
(**substrate**; photopatterning of oxide surface coated with organosilane having acylalkyl sulfide linkage and modification of the surface with aminopolymers for electronic devices and biocompatible materials)
- L42 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
1994:278208 Document No. 120:278208 Electroless process for the formation of metal **patterns** on glass. Van der Putten, Andreas M. T. P.; Willard, Nicolaas Petrus; Fokkink, Lambertus Gerrit Jan; Camps, Ivo Godfried Jozef (Philips Electronics N.V., Neth.). Eur. Pat. Appl. EP 577187 A1 19940105, 8 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1993-201804 19930622. PRIORITY: EP 1992-201925 19920629.
- AB The process comprises modifying the substrates with a silane layer, locally removing the layer with a laser or UV-O3 treatment, selectively nucleating the remaining silane layer with a polymer-stabilized Pd sol, and metalizing the **substrates** by electroless **process**. This process employs neither **photoresists** nor org. solvents. The method is esp. suitable for forming a black matrix on passive plates for LCD's, and on other flat, color display panels, e.g., flat cathode-ray tubes.
- IT 1760-24-3P  
(modification with, of glass plates, in metal **pattern** formation by electroless coating process)
- RN 1760-24-3 HCAPLUS  
CN 1,2-Ethanediamine, N-[3-(trimethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



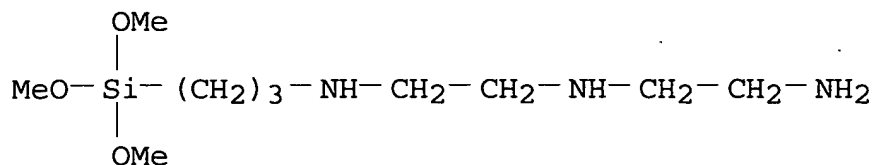
- IC ICM C03C017-38  
ICS G03F007-075
- CC 57-1 (Ceramics)  
Section cross-reference(s): 75
- ST metal **pattern** formation glass oxide; silane coating  
removal laser **pattern**; polymer stabilizer palladium sol  
silane; electroless metalization glass
- IT Silanes  
(alkoxyamino, modification with, of glass plates, in metal  
**pattern** formation by electroless coating process)
- IT Polymers, uses  
(palladium sols stabilized with, activation with, of  
**patterned** UV-ozone-treated silane-coated glass plates,  
for metal **pattern** formation by electroless coating  
process)
- IT Ultraviolet radiation  
(removal by, in presence of ozone, of silanes, in metal  
**pattern** formation on glass plates by electroless coating  
process)
- IT Cathode-ray tubes  
(color, black metal matrix formation on glass plates for,  
activated **pattern** formation in)
- IT Coating process  
(electroless, metalization, of glass plates, activated  
**pattern** formation for, for liq.-crystal display devices  
and flat color cathode-ray tubes)
- IT Optical imaging devices  
(liq.-crystal, black metal matrix formation on glass plates for,  
activated **pattern** formation in)
- IT Glass, oxide  
(plate, borosilicate, metal **pattern** formation on,  
electroless process for, coating with silane and  
**patterned** UV-ozone radiation and activation with  
palladium sol in)
- IT 7440-02-0, Nickel, uses  
(coating with, electroless, of glass plates, activated  
**pattern** formation for, for liq.-crystal display devices  
and flat color cathode-ray tubes)
- IT 7440-05-3P, Palladium, properties  
(colloidal, activation with polymer-stabilized, of  
**patterned** UV-ozone-treated silane-coated glass plates,  
for metal **pattern** formation by electroless coating  
process)
- IT 919-30-2P, 3-Aminopropyl triethoxysilane 1760-24-3P



- (modification with, of glass plates, in metal **pattern** formation by electroless coating process)
- IT 9002-89-5P, Poly(vinyl alc.) 9003-39-8P, Poly(vinyl pyrrolidone) (palladium sols stabilized with, activation with, of **patterned** UV-ozone-treated silane-coated glass plates, for metal **pattern** formation by electroless coating process)
- IT 10028-15-6, Ozone, miscellaneous (removal by UV radiation in presence of, of silanes, in metal **pattern** formation on glass plates by electroless coating process)
- L42 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
1994:231677 Document No. 120:231677 Top-surface imaging using selective electroless metalization of **patterned** monolayer films. Calvert, J. M.; Dressick, W. J.; Dulcey, C. S.; Chen, M. S.; Goerger, J. H.; Stenger, D. A.; Koloski, T. S.; Calabrese, G. S. (Nav. Res. Lab., Washington, DC, 20375-5320, USA). ACS Symp. Ser., 537(Polymer for Microelectronics), 210-19 (English) 1994. CODEN: ACSMC8. ISSN: 0097-6156.
- AB A top **surface** imaging microlithog. **process** that involves selective electroless (EL) metalization of surfaces modified with ligating organosilane ultrathin films (UTFs) is described. Fabrication of metal features with 0.4 .mu.m linewidths using 193 nm exposure is shown. Metal-ligand complexation chem. is used for covalent attachment of a Pd(II) catalyst to the UTF-**treated surface**. The mol. nature of the UTF layer is shown to control the adhesive strength of the EL metal deposit; values of >500 psi on single crystal Si wafers have been obtained. The ligand-**based** UTF **process** is a promising approach for a range of microelectronic applications where high resoln., adherent, selective metalization is required.
- IT 1760-24-3, N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane 35141-30-1 84127-79-7 (electroless metalization of surfaces modified by, in photolithog. top-surface imaging)
- RN 1760-24-3 HCAPLUS  
CN 1,2-Ethanediamine, N-[3-(trimethoxysilyl)propyl]- (9CI) (CA INDEX NAME)

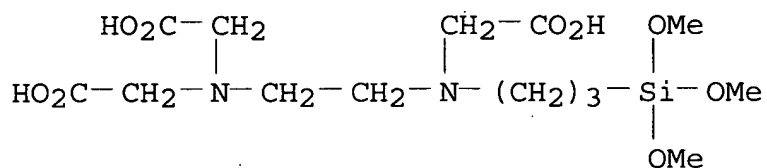


- RN 35141-30-1 HCAPLUS  
CN 1,2-Ethanediamine, N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



RN 84127-79-7 HCAPLUS

CN 2-Oxa-7,10-diaza-3-siladodecan-12-oic acid, 7,10-bis(carboxymethyl)-3,3-dimethoxy- (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Resists**

(photo-, ligating organosilanes, selective electroless metalization of)

IT 1760-24-3, N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane  
27326-65-4, 2-(Trimethoxysilyl)ethyl-2-pyridine 35141-30-1  
84127-79-7 154260-92-1 154260-93-2

(electroless metalization of surfaces modified by, in photolithog. top-surface imaging)

L42 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2002 ACS

1993:450471 Document No. 119:50471 Characterization of films of organofunctional silanes by ToF-SIMS. Part II. Films of .gamma.-APS, AEAPS and FPS on cold-rolled steel and cold-rolled zinc substrates. van Ooij, W. J.; Sabata, A. (Armco Res. and Technol., Middletown, OH, 45044-3999, USA). Surf. Interface Anal., 20(5), 475-84 (English) 1993. CODEN: SIANDQ. ISSN: 0142-2421.

AB The structure, compn. and thickness of thin films of various functional silanes formed on cold-rolled steel or cold-rolled zinc surfaces were studied by high-resoln. time-of-flight SIMS and AES. The silanes were .gamma.-aminopropyltriethoxysilane, N-(2-aminoethyl)-3-aminopropyltrimethoxysilane, and perfluorinated propyltrimethoxysilane, which were deposited from dil. solns. by dipping or spin-coating. Variables were the pH of the soln. and the silane concn. The objective was to improve the understanding of the structure and orientation of silane films on metals, in view of possible applications of such coupling agents in areas where corrosion control and durable paint adhesion is required.

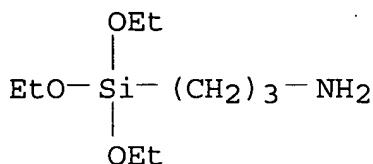
IT 29159-37-3, .gamma.-Aminopropyltriethoxysilane homopolymer  
(films, structure, compn. and thickness of, on cold-rolled steel or cold-rolled zinc)

RN 29159-37-3 HCAPLUS  
 CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 919-30-2

CMF C9 H23 N O3 Si



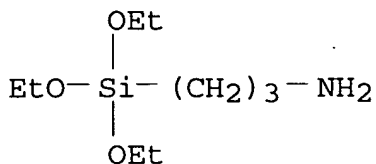
CC 37-5 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 38  
 IT 29159-37-3, .gamma.-Aminopropyltriethoxysilane homopolymer  
 29226-47-9 148721-55-5  
 (films, structure, compn. and thickness of, on cold-rolled steel or cold-rolled zinc)  
 IT 1310-73-2, Sodium hydroxide, uses  
 (steel **substrates treated** with soln. of, characterization of silane films by time-of-flight SIMS and AES in relation to)  
 L42 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
 1992:427878 Document No. 117:27878 TOF SIMS and XPS study of the interaction of hydrolyzed .gamma.-aminopropyltriethoxysilane with E-glass surfaces. Wang, D.; Jones, F. R.; Denison, P. (Sch. Mater., Univ. Sheffield, Sheffield, S10 2TZ, UK). J. Adhes. Sci. Technol., 6(1), 79-98 (English) 1992. CODEN: JATEE8. ISSN: 0169-4243.  
 AB The interaction of E-glass surfaces with hydrolyzed .gamma.-aminopropyltriethoxysilane was studied by time-of-flight (TOF) SIMS and XPS. The SIMS spectrum consisted of 4 series of fragmentation **patterns**, 2 of which could be assigned to the poly(aminosilane). The remaining 2 series were consistent with the well-known fragmentation of polydimethylsiloxane. Using aq. extn. procedures, it was possible to show that the largest observable fragment increased in size after treatment with warm H2O but subsequently decreased again after hot-H2O extn. This demonstrated the removal of low-mol.-wt. oligomeric species overlying a crosslinked network of graded d. The pos. Al-ion intensity remained strong, suggesting its incorporation into the silane film. XPS anal. confirmed the incorporation of aluminum ions from the substrate into the coating.  
 IT 29159-37-3P  
 (formation and identification of, on glass fibers, time-of-flight SIMS and XPS study of)  
 RN 29159-37-3 HCAPLUS

CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 919-30-2

CMF C9 H23 N O3 Si



CC 37-6 (Plastics Manufacture and Processing)

IT 29159-37-3P

(formation and identification of, on glass fibers, time-of-flight SIMS and XPS study of)

L42 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2002 ACS

1992:175587 Document No. 116:175587 Characterization of films of organofunctional silanes by TOFSIMS and XPS. Part I. Films of N-[2-(vinylbenzylamino)ethyl]-3-aminopropyltrimethoxysilane on zinc and .gamma.-aminopropyltriethoxysilane on steel substrates. Van Ooij, W. J.; Sabata, A. (Armco Res. Technol., Middletown, OH, 45043, USA). J. Adhes. Sci. Technol., 5(10), 843-63 (English) 1991. CODEN: JATEE8. ISSN: 0169-4243.

AB The structure of thin films formed by N-[2-(vinylbenzylamino)-ethyl]-3-aminopropyltrimethoxysilane and .gamma.-aminopropyltriethoxysilane deposited onto mech. polished Zn or mild steel from dil. aq. solns. were detd. using time-of-flight (TOF) SIMS and XPS. TOFSIMS gave structural information which was highly complementary to the XPS data. Aspects such as silane condensation and crosslinking, oxidn. at elevated temps., the formation of metallosiloxane bonds, and incomplete hydrolysis were detected by TOFSIMS by virtue of its high mass resoln. and unlimited mass range. The structures of the films were strongly dependent on the nature of the **substrate**, the deposition **conditions**, and heat treatment of the films.

IT 29159-37-3, .gamma.-Aminopropyltriethoxysilane homopolymer (films, deposited on steel, structural characterization of, by time-of-flight SIMS and XPS)

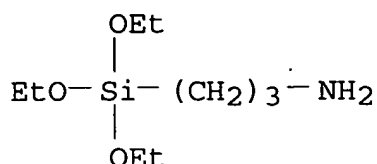
RN 29159-37-3 HCAPLUS

CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 919-30-2

CMF C9 H23 N O3 Si



CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 36, 37

IT 29159-37-3, .gamma.-Aminopropyltriethoxysilane homopolymer  
(films, deposited on steel, structural characterization of, by  
time-of-flight SIMS and XPS)

L42 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2002 ACS

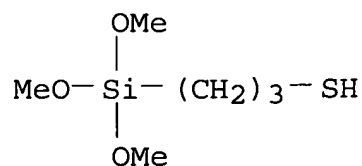
1990:207946 Document No. 112:207946 Negative **pattern**-forming  
composition containing polyorganosiloxane. Muramoto, Naohiro; Mine,  
Katsutoshi (Toray Silicone Co., Ltd., Japan). Eur. Pat. Appl. EP  
315954 A2 19890517, 17 pp. DESIGNATED STATES: R: BE, DE, FR, GB.  
(English). CODEN: EPXXDW. APPLICATION: EP 1988-118581 19881108.  
PRIORITY: JP 1987-282638 19871109.

AB A neg. **pattern**-forming compn. useful in producing highly  
accurate submicron **patterns** having unusually high aspect  
ratios at superior resolns. comprises a solvent-sol.  
polyorganosiloxane having SiO<sub>4</sub>/2 units and at least one other  
organosiloxane unit contg. a high-energy-radiation-sensitive group,  
the polyorganosiloxane having a softening temp. greater than the  
room temp. The **pattern**-forming compn. is sensitive to  
electron beams and x-rays and is also sensitive to UV radiations  
when a sensitizer, such as 2,4-dimethylthioxanthone or  
2-hydroxy-2-methylpropiophenone, is included in the compn. and can  
be used as a **resist** material in the fabrication of  
semiconductor devices. The **pattern** formed from the compn.  
is ideally used as a mask highly resistant to the dry etching of an  
underlying org. material, such as an org. insulating material or an  
org. planarizing layer as used in a multilayer **resist**  
system.

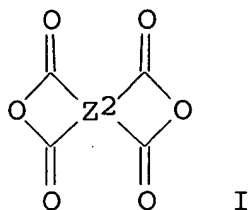
IT 4420-74-0, 3-Mercaptopropyltrimethoxysilane  
(reaction of, in prepg. polyorganosiloxanes as radiation  
**resists**)

RN 4420-74-0 HCAPLUS

CN 1-Propanethiol, 3-(trimethoxysilyl)- (7CI, 8CI, 9CI) (CA INDEX  
NAME)



IC ICM G03F007-10  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 76  
ST polyorganosiloxane radiation **resist** semiconductor device;  
x ray **resist** polyorganosiloxane; electron beam  
**resist** polyorganosiloxane; **photoresist** UV  
polyorganosiloxane semiconductor device  
IT Siloxanes and Silicones, uses and miscellaneous  
(as radiation **resists** for forming dry-etching-resistant  
**patterns** for semiconductor device fabrication)  
IT Semiconductor devices  
(polyorganosiloxane radiation **resists** for fabrication  
of)  
IT **Resists**  
(electron-beam, polyorganosiloxanes as)  
IT **Resists**  
(photo-, UV, polyorganosiloxanes as)  
IT **Resists**  
(x-ray, polyorganosiloxanes as)  
IT 75-77-4, Trimethylchlorosilane, reactions 78-10-4,  
Tetraethoxysilane 682-01-9, Tetrapropyloxysilane 999-97-3,  
Hexamethyldisilazane 1719-57-9, 1-Chloromethyldimethylchlorosilane  
1719-58-0, Dimethylvinylchlorosilane 1825-61-2 2530-85-0,  
3-Methacryloxypropyltrimethoxysilane 2768-02-7,  
Vinyltrimethoxysilane 3634-56-8, Dimethylisopropylchlorosilane  
**4420-74-0**, 3-Mercaptopropyltrimethoxysilane 7446-81-3,  
Sodium acrylate 7691-02-3, 1,3-Divinyl-1,1,3,3-  
tetramethyldisilazane 14346-37-3, Isopropyltrimethoxysilane  
15933-59-2, 1,3-Dihydrogen-1,1,3,3-tetramethyldisilazane  
16546-47-7 16753-62-1, Methylvinyltrimethoxysilane 18143-33-4  
18162-48-6, tert-Butyldimethylchlorosilane 103460-81-7,  
p-(1-Chloromethyl)phenethyltrichlorosilane 116778-00-8,  
1,3-Bis(3-glycidoxypropyl)-1,1,3,3-tetramethyldisilazane  
(reaction of, in prepg. polyorganosiloxanes as radiation  
**resists**)  
L42 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
1989:163595 Document No. 110:163595 Photosensitive polyamic acid  
compositions. (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn.  
Kokai Tokkyo Koho JP 60088939 A2 19850518 Showa, 20 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1983-197129 19831021.  
GI



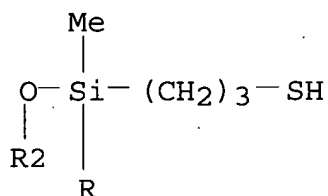
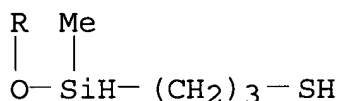
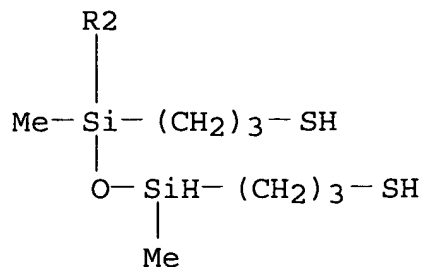
AB The claimed photosensitive compns. contain (1) a polyamic acid obtained by reaction of  $(\text{CH}_2:\text{CHZd})_a(\text{H}_2\text{NZ1})_b\text{R1cSiO}(4-a-b-c)/c$  ( $0 < a$ ;  $b \leq 3$ ;  $0 \leq c \leq 2$ ;  $a + b + c \leq 4$ ;  $d = 0, 1$ ; Z, Z1 = divalent org. moiety), I (Z2 = tetravalent org. moiety), and  $\text{H}_2\text{NZ3NH}_2$  or  $\text{H}_2\text{NZ4Z5}(\text{NH}_2)_2$  (Z3 = divalent org. moiety; Z4 =  $\text{SO}_2$ , CO; Z5 = trivalent org. moiety), (2) a mercapto compd. contg.  $\geq 2$  SH groups: less than equiv. with respect to the  $\text{CH}_2\text{CHZd}$  groups of the above Si compds.), and (3) a photosensitizer [0-5 wt. parts/100 parts solids on (1) + (2)]. The compns. exhibit excellent storage stability, good resolving power, and good adhesion with substrates. The photosensitive compns. are esp. useful in forming heat-resistant polyimide insulator **patterns**.

IT 108315-45-3

(photosensitive polyamic acid compns. contg.)

RN 108315-45-3 HCAPLUS

CN 1-Propanethiol, 3,3',3'',3'''-(1,3,5,7-tetramethyl-1,3,5,7-tetrasiloxanetetrayl)tetrakis- (9CI) (CA INDEX NAME)

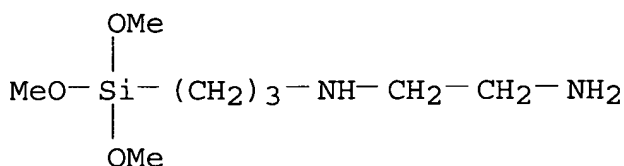


- IC ICM G03C001-71  
ICS C08G075-12; G03F007-10
- CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT Semiconductor devices  
(fabrication of, **resist** compns. for)
- IT Polyimides, uses and miscellaneous  
(insulator **patterns** of, prepn. of)
- IT Polyamic acids  
(photosensitive compns. contg., polyimide insulator **patterns** from)
- IT **Resists**  
(photo-, siloxane deriv. copolymers as)
- IT 80-43-3 18001-52-0 22499-12-3 **108315-45-3**  
(photosensitive polyamic acid compns. contg.)
- L42 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
1988:561967 Document No. 109:161967 Selective metallization process and additive method for manufacturing printed circuit boards.  
Ferrier, Donald R.; Larson, Gary B. (MacDermid, Inc., USA). U.S. US 4748104 A 19880531, 7 pp. (English). CODEN: USXXAM. APPLICATION: US 1986-929595 19861110.
- AB Processes for selective metalization of a substrate are described in which a substrate **patterned** in a desired manner with a **resist** is treated with a conditioning agent (which increases the adsorption on exposed substrate areas of subsequently applied



catalytic species), an adjuvant (which decreases the receptivity of the **resist** for the catalytic species), and a deactivating agent (under conditions which also decrease the receptivity of the **resist** for the catalytic species) preparatory to catalytic activation and electroless deposit of metal (e.g., Cu) flash. By proceeding in this manner, adherent flash metal deposit is achieved on non-**resist** areas without encountering significant plating on **resist** areas. Following metal flash deposit, the **resist** can be easily and cleanly stripped and addnl. metal then built up on the flash metal. The adjuvant may be an amine; the conditioning agent may be an organosilane; and the deactivating agent may comprise an aq. alk. soln.

IT 1760-24-3  
 (in selective metalization for printed circuit board manuf.)  
 RN 1760-24-3 HCAPLUS  
 CN 1,2-Ethanediamine, N-[3-(trimethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



IC ICM G03C005-00  
 NCL 430315000  
 CC 76-14 (Electric Phenomena)  
 IT 7440-50-8, Copper, uses and miscellaneous  
 (electroless deposition of, **pretreatment** of  
**substrates** for selective metalization by, in printed  
 circuit board manuf.)  
 IT 78-90-0, 1,2-Propanediamine 97-84-7, N,N,N',N'-Tetramethyl-1,3-  
 butanediamine 107-15-3, Ethylenediamine, uses and miscellaneous  
 111-40-0, Diethylene triamine 497-19-8, Sodium carbonate, uses and  
 miscellaneous 919-30-2, .gamma.-Aminopropyltriethoxysilane  
 1760-24-3 3010-24-0 116711-11-6  
 (in selective metalization for printed circuit board manuf.)

L42 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2002 ACS  
 1987:76145 Document No. 106:76145 Lift-off processes by multilayer  
**resists**. Ono, Yoichi (Seiko Epson K. K., Japan). Jpn.  
 Kokai Tokkyo Koho JP 61170738 A2 19860801 Showa, 4 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 1985-11859 19850125.  
 AB In lift-off processes with multilayer **resists**, the  
 surfaces of **underlayer resists** are  
**pretreated** with silane coupling agents to prevent dissoln.  
 of the **resists** in each other. Thus, a pos.-type  
**photoresist** (thickness .apprx.2 .mu.) was applied to a Si  
 wafer and prebaked at 80.degree. for 20 min, then exposed all over  
 the surface so as to make the exposure 2 times of the upper

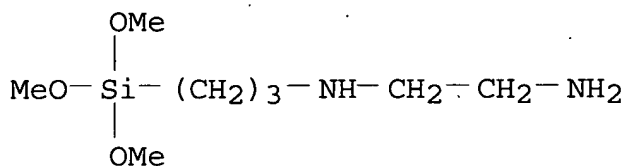
**photoresist**, surface treated with a 0.1 vol.% aq. SH-6020 (silane coupling agent), dried at 80.degree. for 10 min, then the same **resist** (thickness 0.8 .mu.) was applied again, prebaked at 100.degree. for 20 min, exposed to light through a photomask, developed to form an over-hung shape, then a 2000-ANG. Al film was formed on it, and finally the **resist** was peeled off to obtain an Al **pattern**.

IT 1760-24-3, SH-6020

(coupling agent, in lift-off process with multilayer **resists**)

RN 1760-24-3 HCAPLUS

CN 1,2-Ethanediamine, N-[3-(trimethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



IC ICM G03C005-00

ICS G03C001-00; G03F007-00

ICA H01L021-30

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST multilayer **resist** lift off process; silane coupling agent  
multilayer **resist**

IT **Resists**

(lift-off process with multilayer, silane coupling agent in)

IT 1760-24-3, SH-6020 61417-49-0, TTS 106716-89-6

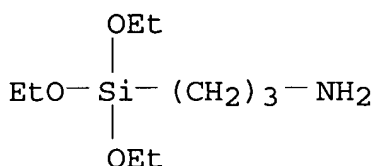
(coupling agent, in lift-off process with multilayer **resists**)

L42 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2002 ACS

1967:86774 Document No. 66:86774 Corrosion-resistant coatings for metal. Morehouse, Edward L.; Pines, Arthur N. (Union Carbide Corp.). Ger. DE 1233522 19670202, 10 pp. (German). CODEN: GWXXAW. PRIORITY: US 19570719.

AB The prepn. of an anticorrosive coating for metal is described. Thus, 50 g. H<sub>2</sub>O was added to a mixt. of 200 g. .gamma.-aminopropyltriethoxysilane (I) and 130 g. abs. EtOH (II) over 15-20 min. and the mixt. was heated under reflux for 30 min. This soln. was dild. with II to give 1 part resin/5 parts II. A Cu strip was partially coated with the dild. soln. and air-dried. The strip was heated for 4 hrs. at 250.degree. in an air oven. The **treated surface** was bright, while the untreated portion was oxidized and dark. A 5% alc. soln. of I homopolymer (III) or of III-PhSi(OEt)<sub>3</sub> copolymer or of [H<sub>2</sub>N(CH<sub>2</sub>)<sub>3</sub>SiO<sub>1.5</sub>]<sub>0.5</sub>(PhSiO<sub>1.5</sub>)<sub>0.4</sub>[Me<sub>2</sub>SiO]<sub>0.1</sub> (IV) can be used to coat Cu, Al, or Ag in the case of IV.

IT 29159-37-3  
 (coatings of, on metal, corrosion-resistant)  
 RN 29159-37-3 HCAPLUS  
 CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 919-30-2  
 CMF C9 H23 N O3 Si



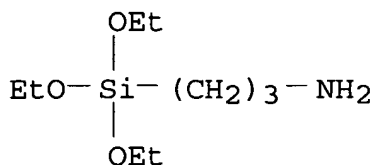
IC C09D  
 CC 42 (Coatings, Inks, and Related Products)  
 IT 919-30-2 3037-72-7 3069-30-5 13497-18-2 13497-26-2  
 16099-52-8 29159-37-3 31392-08-2 31392-09-3  
 31392-10-6 31392-11-7 31392-12-8 31392-15-1 31392-25-3  
 31474-05-2  
 (coatings of, on metal, corrosion-resistant)

=> d 143 1-8 cbib abs hitstr hitind

L43 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
 2001:762370 Document No. 135:325313 Manufacture of optical disk master with high resolution **pattern**. Sakamizu, Toshio; Shiraishi, Hiroshi (Hitachi Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001291288 A2 20011019, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-107998 20000405.

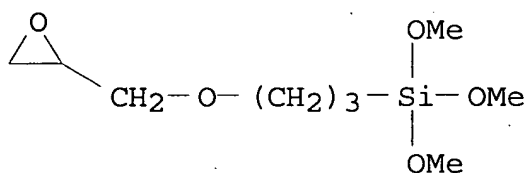
AB The title optical disk master manuf. comprises (1) a process to **treat a substrate surface** with a nonbase-generating type org. silicon compd. contg. a hydrolysis group(s) or a vinyl polymer contg. a hydrolysis group(s), (2) a process to form a chem. amplification **resist** compn. layer on the **substrate**, (3) a **process** to irradiate the **photoresist** layer to form a latent pit **pattern**, and (4) a process to develop the pit **pattern**. The manuf. produces the optical disk master with high throughput.

IT 919-30-2, 3-Aminopropyltriethoxysilane 2530-83-8,  
 3-Glycidoxypropyltrimethoxysilane  
 (for **surface treatment** of optical  
**disk** substrate)  
 RN 919-30-2 HCAPLUS  
 CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)



RN 2530-83-8 HCAPLUS

CN Silane, trimethoxy[3-(oxiranylmethoxy)propyl]- (9CI) (CA INDEX NAME)



IC ICM G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST optical disk master manuf **surface treatment**  
silane coupling agent

IT **Photoresists**

(chem. amplification; manuf. of optical disk master with high resoln. **pattern**)

IT Optical disks

Photolithography

(manuf. of optical disk master with high resoln. **pattern**)

IT 75-94-5, Vinyltrichlorosilane 919-30-2,  
3-Aminopropyltriethoxysilane 2530-83-8,  
3-Glycidoxypropyltrimethoxysilane 2530-85-0, 3-  
Methacryloxypropyltrimethoxysilane  
(for **surface treatment** of optical  
**disk** substrate)

IT 9003-17-2, Polybutadiene ..

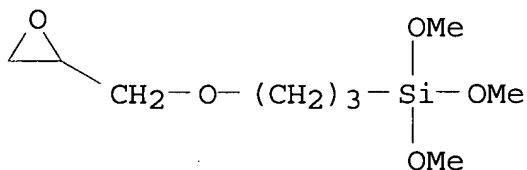
(partially epoxylated; for **surface treatment**  
of optical **disk** substrate)

L43 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2002 ACS

2001:213015 Document No. 135:38836 Large-area MEMS fabrication with thick SU-8 **photoresist** applied to an x-ray image sensor array. Daniel, Jurgen H.; Krusor, Brent S.; Apte, Raj B.; Street, Robert A.; Goredema, Adela; McCallum, Jason; Boils-Boissier, Daniele C.; Kazmaier, Peter M. (Xerox Palo Alto Research Center, Palo Alto, CA, 94304, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4174 (Micromachining and Microfabrication Process Technology VI), 40-48 (English) 2000. CODEN: PSISDG. ISSN:

0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

- AB MEMS fabrication on large area substrates is promising for novel system concepts, but **processes based** on cryst. silicon cannot be used. Polymeric materials such as the thick **photoresist** SU-8 are more appropriate for this purpose because their processing can be scaled to large areas. An x-ray image sensor array based on amorphous silicon on glass substrates was taken as an examples to apply the SU-8 microfabrication technique. The authors anticipate an improved performance of the imager. The resoln. of the x-ray imager is expected to increase by **patterning** the x-ray conversion screen into cells, which match the sensor pixels of the imager, and SU-8 defines these cells. Furthermore, SU-8 functions as a thick interlayer dielec. with decrease the electronic noise and result in a higher sensitivity of the imager. The fabrication process with SU-8 will be described and challenging issues, esp. when considering large area substrates, will be discussed.
- IT 2530-83-8, 3-Glycidoxypropyltrimethoxysilane  
(adhesion promoter; microfabrication of x-ray image sensor array using thick **photoresist** SU-8 process and application of SR-U as interlayer dielec.)
- RN 2530-83-8 HCAPLUS
- CN Silane, trimethoxy[3-(oxiranylmethoxy)propyl]- (9CI) (CA INDEX NAME)



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST microfabrication x ray image sensor array thick SU8 **photoresist**
- IT Radiography  
(digital; microfabrication of amorphous Si on glass substrates x-ray image sensor array using thick **photoresist** SU-8 process)
- IT Micromachining  
**Photoresists**  
(microfabrication of amorphous Si on glass substrates x-ray image sensor array using thick **photoresist** SU-8 process)
- IT Electric insulators  
Electrodeposition  
(microfabrication of x-ray image sensor array using thick **photoresist** SU-8 process and application of SR-U as interlayer dielec.)

- IT Optical imaging sensors  
(x-ray; microfabrication of amorphous Si on glass substrates  
x-ray image sensor array using thick **photoresist** SU-8  
process)
- IT 2530-83-8, 3-Glycidoxypopyltrimethoxysilane  
(adhesion promoter; microfabrication of x-ray image sensor array  
using thick **photoresist** SU-8 process and application of  
SR-U as interlayer dielec.)
- IT 7440-21-3, Silicon, processes  
(amorphous; microfabrication of amorphous Si on glass substrates  
x-ray image sensor array using thick **photoresist** SU-8  
process)
- IT 37265-36-4, gadolinium oxysulfide  
(microfabrication of amorphous Si on glass substrates x-ray image  
sensor array using thick **photoresist** SU-8 process)
- IT 7429-90-5, Aluminum, processes  
(microfabrication of amorphous Si on glass substrates x-ray image  
sensor array using thick **photoresist** SU-8 process)
- IT 7440-27-9, Terbium, uses  
(microfabrication of amorphous Si on glass substrates x-ray image  
sensor array using thick **photoresist** SU-8 process)
- IT 221273-01-4, SU-8 **photoresist**  
(microfabrication of amorphous Si on glass substrates x-ray image  
sensor array using thick **photoresist** SU-8 process)
- IT 37757-92-9  
(monomer additive; microfabrication of x-ray image sensor array  
using thick **photoresist** SU-8 process and application of  
SR-U as interlayer dielec.)
- IT 7782-44-7, Oxygen, processes  
(plasma; microfabrication of amorphous Si on glass substrates  
x-ray image sensor array using thick **photoresist** SU-8  
process)
- IT 2551-62-4, Sulfur hexafluoride  
(plasma; microfabrication of x-ray image sensor array using thick  
**photoresist** SU-8 process and application of SR-U as  
interlayer dielec.)
- IT 7440-02-0, Nickel, uses 7440-32-6, Titanium, uses  
(seed layer; microfabrication of x-ray image sensor array using  
thick **photoresist** SU-8 process and application of SR-U  
as interlayer dielec.)

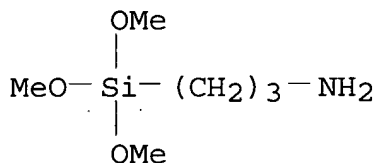
L43 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2002 ACS

2000:682637 Document No. 134:11384 Selective Deposition in  
Layer-by-Layer Assembly: Functional Graft Copolymers as Molecular  
Templates. Jiang, Xueping; Hammond, Paula T. (Department of  
Chemical Engineering, Massachusetts Institute of Technology,  
Cambridge, MA, 02139, USA). Langmuir, 16(22), 8501-8509 (English)  
2000. CODEN: LANGD5. ISSN: 0743-7463. Publisher: American  
Chemical Society.

AB A new approach to creating **patterned** composite structures  
with layer-by-layer assembled thin films is introduced. In this  
approach, the top surfaces of layer-by-layer films are chem.

**patterned** by the direct stamping of functional polymers on the surface. The resulting **pattern** is then used as a template for the further deposition of materials on the surface. This paper illustrates this concept through the **patterning** of an oligoethylene glycol **resist** atop a polyelectrolyte multilayer surface. The **resist** layer is created by stamping an oligoethylene oxide-maleic anhydride graft copolymer onto the top polyamine surface. Further deposition of polyions results in the formation of a **patterned** polymer film atop the original multilayer thin film. When a **patterned** polyelectrolyte film is used as the base layer or **substrate** in this **process**, a second **pattern** can be stamped atop the original **patterned** array. Subsequent selective adsorption of polymers yields a second level of microstructures, illustrating the concept of multiple level **patterning** for layer-by-layer thin films; this concept can be broadened to include selective deposition of numerous materials on top of multilayer polymer systems.

IT 13822-56-5, Aminopropyltrimethoxysilane  
 (**patterning** oligoethylene oxide-maleic anhydride graft copolymer on aminosilane SAM model surface)  
 RN 13822-56-5 HCAPLUS  
 CN 1-Propanamine, 3-(trimethoxysilyl)- (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST polyelectrolyte multilayer **patterning** graft copolymer mol template; oligoethylene oxide maleic anhydride graft copolymer template adsorption polyelectrolyte; lithog **patterning** graft copolymer mol template adsorption polyelectrolyte multilayer  
 IT Chemisorption  
 IR spectra  
 Multilayers  
 Physisorption  
 Polyelectrolytes  
**Resists**  
 (lithog. by printing surface of multilayer film with oligoethylene oxide-maleic anhydride graft copolymer **resist** to template subsequent selective multilayer adsorption of polyelectrolytes)  
 IT Self-assembled monolayers  
 (**patterning** complex microstructures by stamping oligoethylene oxide-maleic anhydride graft copolymer on **patterned** surfaces)

- IT Lithography  
(use of functional template from oligoethylene oxide-maleic anhydride graft copolymer for chem. **patterning** of layer-by-layer film surfaces)
- IT 69839-68-5 112311-92-9, Maleic anhydride-polyethylene glycol allyl methyl ether copolymer 215512-58-6  
(lithog. by printing surface of multilayer film with oligoethylene oxide-maleic anhydride graft copolymer **resist** to template subsequent selective multilayer adsorption of polyelectrolytes)
- IT 130727-41-2  
(**patterning** complex microstructures by stamping oligoethylene oxide-maleic anhydride graft copolymer on **patterned** surfaces)
- IT 13822-56-5, Aminopropyltrimethoxysilane  
(**patterning** oligoethylene oxide-maleic anhydride graft copolymer on aminosilane SAM model surface)
- IT 9002-98-6 9003-04-7, Poly(acrylic acid) sodium salt 9080-79-9, Sodium poly(styrenesulfonate) 26062-79-3, Polydiallyldimethylammonium chloride 26913-06-4, Poly[imino(1,2-ethanediyl)]  
(polyelectrolyte; lithog. by printing surface of multilayer film with oligoethylene oxide-maleic anhydride graft copolymer **resist** to template subsequent selective multilayer adsorption of polyelectrolytes)
- IT 9016-00-6, Poly(dimethylsiloxane) 31900-57-9, Poly(dimethylsiloxane)  
(stamp; lithog. by printing surface of multilayer film with oligoethylene oxide-maleic anhydride graft copolymer **resist** to template subsequent selective multilayer adsorption of polyelectrolytes)
- IT 7440-21-3, Silicon, **processes** 7440-57-5, Gold, **processes** 9003-53-6, Polystyrene  
(**substrate**; lithog. by printing surface of multilayer film with oligoethylene oxide-maleic anhydride graft copolymer **resist** to template subsequent selective multilayer adsorption of polyelectrolytes)

L43 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2002 ACS

- 1999:183139 Document No. 130:318478 Using Elastomeric Membranes as Dry **Resists** and for Dry Lift-Off. Jackman, Rebecca J.; Duffy, David C.; Cherniavskaya, Oksana; Whitesides, George M. (Department of Chemistry and Chemical Biology, Harvard University, Cambridge, MA, 02138, USA). Langmuir, 15(8), 2973-2984 (English) 1999. CODEN: LANGD5. ISSN: 0743-7463. Publisher: American Chemical Society.
- AB Elastomeric membranes that contained regular arrays of well-defined holes were formed by spin-coating a prepolymer onto a photolithog. defined master. These membranes were used as dry **resists** or as masks in dry lift-off to produce simple features .gtoreq.5 .mu.m on both planar and nonplanar surfaces. These procedures were dry because the membranes conformed and sealed reversibly to surfaces: no solvent was required either to deposit the membrane or

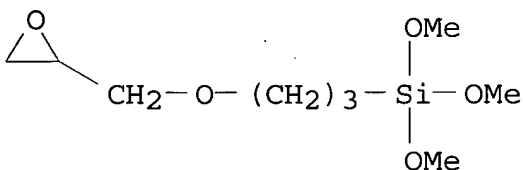


to remove it from the substrate. A variety of materials, some of which would be difficult to **pattern** using conventional methods, were **patterned** using this technique. These materials included metals, sol-gels, hydrogels, biol. macromols., and organometallic mols. The membranes were used in sequential, dry-lift off steps to produce structures with greater complexity than those generated with a single membrane.

IT 2530-83-8, [3-(Glycidyloxy)propyl]trimethoxysilane  
(micropatterning of org. modified silicate formed by sol-gel precursor using polydimethylsiloxane membrane as dry lithog. **resists**)

RN 2530-83-8 HCAPLUS

CN Silane, trimethoxy[3-(oxiranylmethoxy)propyl]- (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST elastomeric membrane dry **resist** lift off lithog

IT Membranes, nonbiological  
(elastomeric; micropatterning using elastomeric membranes as dry lithog. **resists** and for dry lift-off)

IT Ceramers  
Sol-gel processing  
(micropatterning of org. modified silicate formed by sol-gel precursor using polydimethylsiloxane membrane as dry lithog. **resists**)

IT **Resists**  
(micropatterning using elastomeric membranes as dry lithog. **resists** and for dry lift-off)

IT Gelatins, processes  
(micropatterns of gelatin using polydimethylsiloxane membrane as dry lithog. **resists**)

IT Electron beams  
(micropatterns of gold fabricated by electron-beam evapn. using polydimethylsiloxane membrane as dry lithog. **resists**)

IT Electrodeposition  
(micropatterns of silver deposited by electroplating using polydimethylsiloxane membrane as dry lithog. **resists**)

IT 144-62-7, Oxalic acid, processes 2530-83-8,  
[3-(Glycidyloxy)propyl]trimethoxysilane  
(micropatterning of org. modified silicate formed by sol-gel precursor using polydimethylsiloxane membrane as dry lithog. **resists**)

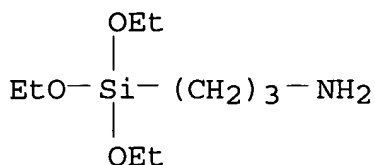
- IT 7440-22-4, Silver, processes  
(micropatterning of silver by electroplating using polydimethylsiloxane membrane as dry lithog. **resists**)
- IT 7440-57-5, Gold, processes  
(micropatterning using elastomeric membranes as dry lithog. **resists** and for dry lift-off)
- IT 9016-00-6, Polydimethylsiloxane 31900-57-9, Polydimethylsiloxane  
(micropatterning using elastomeric membranes as dry lithog. **resists** and for dry lift-off)
- IT 7440-21-3, Silicon, **processes**  
(**wafer**; micropatterning using elastomeric membranes for dry lift-off)

L43 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2002 ACS

1998:439857 Document No. 129:181988 One mask process for stress-buffer and passivation applications using photosensitive benzocyclobutene. Strandjord, A. J. G.; Rogers, W. B.; Ida, Y.; Shiau, S.; Moyer, E. S.; Scheck, D. M.; Devellis, R. R.; Garrou, P. E. (Microelectronics Research and Development, The Dow Chemical Company, Midland, MI, 48674, USA). IEMT/IMC Symposium, 1st, Sonic City-Omiya, Japan, Apr. 16-18, 1997, 261-266. SHM: The Microelectronics Society: Tokyo, Japan. (English) 1997. CODEN: 66JZAY.

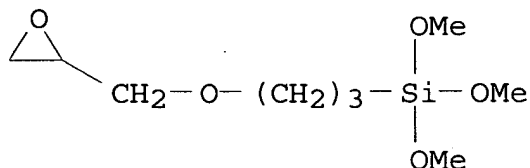
- AB Large die such as SRAMs and DRAMs are subject to significant stresses resulting from the differences in the coeff. of thermal expansion (CTE mismatch) of the die and packaging materials. The use of polymers as a buffering medium between these two materials has been widely practiced in the industry to increase the reliability of these devices. This layer must be **patterned** to allow elec. connection to the bond pads (50 - 250 .mu.m openings). In many of the newer devices, smaller windows (<10 .mu.m) must also be opened up to allow access to other structures, such as "fuse links", which are used to reroute or reconfigure inactive circuits. This need for higher resolu. polymer layers, as well as the desire for shorter processing cycles, has moved the industry away from the use of wet etch polymers toward photosensitive materials. Traditional **wafer level processing** of memory die has required a two mask operation for **patterning** features in the underlying primary passivation layer (commonly Si<sub>3</sub>N<sub>4</sub>) followed by coating and **patterning** of the polymer stress-buffer layer. A one mask manufg. process has been developed using photosensitive benzocyclobutene (Photo-BCB) for opening up features (bond pads and fuse links) in both layers using the polymer layer as a permanent etch mask for the Si<sub>3</sub>N<sub>4</sub>. This results in a significant redn. in both the no. of processing steps and the processing time, vs. the traditional two mask process, and therefore, significantly lowers the cost of ownership for passivation/stress-buffer layers. In this paper, we will discuss the Photo-BCB processing steps and compare them to the steps in a two mask passivation/stress-buffer processes.
- IT 919-30-2, 3-Aminopropyltriethoxysilane  
(adhesion promoter; photolithog. one mask process for stress-buffer and passivation applications using photosensitive

benzocyclobutene)  
 RN 919-30-2 HCAPLUS  
 CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 76
- ST memory die **wafer** level **processing**; photolithog  
 single mask process Cyclotene
- IT **Photoresists**  
 (Cyclotene; photolithog. one mask process for stress-buffer and passivation applications using photosensitive benzocyclobutene)
- IT 919-30-2, 3-Aminopropyltriethoxysilane  
 (adhesion promoter; photolithog. one mask process for stress-buffer and passivation applications using photosensitive benzocyclobutene)
- L43 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
 1992:13389 Document No. 116:13389 **Surface treatment**  
 of **substrates** with **resist patterns**.  
 Inamoto, Tadaki (Canon K. K., Japan). Jpn. Kokai Tokkyo Koho JP 03184051 A2 19910812 Heisei, 8 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1989-322750 19891214.
- AB The treatment consists of **treating substrate**  
 having **resist pattern** with 0.01-10 wt.% solns.  
 of silane coupling agent in solvents that do not dissolve or deform the **pattern**, and subsequent removal of the coupling agent with the same solvent. Typically the **resist pattern** is made from pos.-working **photoresist** contg. quinonediazides and alkali-sol. resins. This treatment is useful in working in micro scale using the **pattern** as mold, e.g. in manuf. of ink head for ink-jet printing, by ensuring close contact of molding agent with the **resist pattern**. Thus, a Si wafer on which 2 heat-generating elements for ink-jet head were mounted was appropriately **patterned** by photolithog. using Ozatec R225 (**photoresist**). The **pattern** surface was sprayed for 1 min with 0.01% soln. of A187 (silane coupling agent), and for 3 min with water. The **pattern** was potted with a photocurable bisphenol A epoxy resin, treated with 1,1,1-trichloroethane, and sonicated in 3% NaOH for 5 min to remove the pos. **photoresist pattern**, to obtain an ink-jet head with 2 orifices and 2 heat-generating elements. No defect was obsd. in the head after using for printing 50,000 copies

without blemishes.  
 IT 2530-83-8, A187  
 (treatment of **resist pattern** with, in  
 micromolding process)  
 RN 2530-83-8 HCAPLUS  
 CN Silane, trimethoxy[3-(oxiranylmethoxy)propyl]- (9CI) (CA INDEX  
 NAME)

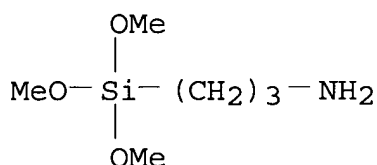


IC ICM G03F007-40  
 ICS B41J002-16  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 ST **resist pattern surface**  
**treatment** molding; silane coupling agent **resist**  
 treatment; ink jet printing head manuf  
 IT Coupling agents  
 (silane, treatment with, of **resist pattern**  
 used for micromolding)  
 IT Printing, nonimpact  
 (ink-jet, manuf. of head for, micromolding using **resist**  
**pattern** in, **surface treatment** of  
**resist pattern** in)  
 IT **Resists**  
 (photo-, **pattern** of, **surface**  
**treatment** of, for micromolding, silane coupling agents  
 for)  
 IT 110158-67-3, Ozatec R225  
 (**pattern** of, **surface treatment** of,  
 in micromolding process, silane coupling agents for)  
 IT 2530-83-8, A187  
 (treatment of **resist pattern** with, in  
 micromolding process)  
 L43 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
 1987:468170 Document No. 107:68170 Preparation of negative- and  
 positive-working **photoresists** resistive to dry etching.  
 Iwamoto, Masao (Toray Industries, Inc., Japan). Jpn. Kokai Tokkyo  
 Koho JP 61270755 A2 19861201 Showa, 5 pp. (Japanese). CODEN:  
 JKXXAF. APPLICATION: JP 1985-112084 19850527.  
 AB The title **photoresists** are comprised of a photosensitive  
 layer contg. a quinoneazide deriv. and a silicone rubber layer. A  
 typical processing method includes total exposure of the  
**photoresists** to decomp. 5-60 mol% of the quinoneazide

deriv., imagewise exposure to decomp. .gtoreq.70 mol% of the quinoneazide deriv. (the order of the exposures may be reversed), **treatment** with a **base**, and development.

Alternately, the **photoresists** may be imagewise exposed to decomp. 5-60% of quinoneazide deriv., **treatment** with a **base**, and development. The method provides **resist patterns** highly resistive to dry etching, with wide selection of materials. Esp. high photosensitivity is obtained for formation of pos. **patterns**. The method is useful in manuf. of integrated elec. circuit **patterns** and also for O-plasma etching of surface of plastics. Thus, a Si wafer was coated with a 2-.mu. layer contg. a partial (47%) ester of a phenol-HCHO novolak resin with naphthoquinone-1-2-diazido-5-sulfonic acid 100, 4,4'-diphenylmethanediisocyanate 30, and dibutyltin dilaurate 0.2 parts, baked at 120.degree. for 2 min, and coated with 1-.mu. layer contg. dimethylpolysiloxane (mol. wt. 25,000; terminal OH) 100, vinyltris(methylethylketoxime)silane 8, dibutyltin diacetate 0.2, and .gamma.-aminopropyltrimethoxysilane 1 part. Total exposure with a metal halide lamp (11 mW/cm<sup>2</sup>) for 6 s to decomp. 18% of the quinoneazide deriv., exposure through a neg. **pattern** (60 s), treatment in a 90:5:5:0.1 Isopar H-butylcarbitol-Et Cellosolve-ethanolamine, development in a 2:4:4 Isopar H-butylcarbitol-ethylcarbitol, and rubbing with soft pad to remove the exposed part of the silicone rubber gave a **pattern**, which was highly resistant to O plasma dry etching.

IT 13822-56-5, .gamma.-Aminopropyltrimethoxysilane  
(in prepn. of silicone rubber top layer for **photoresist**  
contg. quinonediazide deriv. layer)  
RN 13822-56-5 HCAPLUS  
CN 1-Propanamine, 3-(trimethoxysilyl)- (9CI) (CA INDEX NAME)

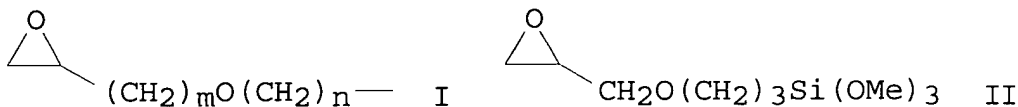


IC ICM G03C005-24  
ICS G03C001-00; G03F007-00; H01L021-30  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
ST **photoresist** silicone rubber etching resistant;  
quinonediazide silicone **photoresist** etching resistant  
IT Rubber, silicone, uses and miscellaneous  
(**photoresists** contg. layer of, for dry  
etching-resistant images, preexposure in processing of)  
IT Alkanes, uses and miscellaneous  
(C9-12-iso-, **photoresist** treatment in soln. contg., for  
photosensitive layer contg. quinonediazide deriv. and silicone  
rubber)

- IT Electric circuits  
(integrated, **photoresists** contg. quinonediazide deriv.  
layer and silicone rubber layer for fabrication of)
- IT **Resists**  
(photo-, contg. quinonediazide deriv. layer and silicone rubber  
layer for dry etching-resistant images, preexposure in processing  
of)
- IT 2224-33-1, Vinyltris(methylethylketoxime)silane 13822-56-5  
, .gamma.-Aminopropyltrimethoxysilane  
(in prepn. of silicone rubber top layer for **photoresist**  
contg. quinonediazide deriv. layer)
- IT 77-58-7, Dibutyltin dilaurate 101-68-8 27156-72-5  
(**photoresist** contg. silicone rubber layer and layer  
contg., for dry etching-resistant images)
- IT 110-80-5 111-90-0 112-34-5 141-43-5, uses and miscellaneous  
(**photoresist** treatment in soln. contg., for  
photosensitive layer contg. quinonediazide deriv. and silicone  
rubber)

L43 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
1986:59419 Document No. 104:59419 **Resist** formation. Fujii,  
Tsuneo (Daikin Kogyo Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
60138546 A2 19850723 Showa, 5 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1983-248533 19831227.

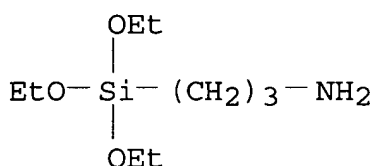
GI



AB A **resist** formation method consists of **treating** a  
**substrate surface** with a silane coupling agent  
having amino, thiol, vinyl, or ethylene oxide groups and then  
forming a **resist** layer consisting of a fluoroalkyl  
acrylate polymer. Preferable silane coupling agents have .gtoreq.1  
of the H atoms attached to the Si atom (of a silane, silathiane or  
siloxane) substituted by H<sub>2</sub>N(CH<sub>2</sub>)<sub>n</sub>, H<sub>2</sub>N(CH<sub>2</sub>)<sub>n</sub>NH(CH<sub>2</sub>)<sub>n</sub>,  
H<sub>2</sub>NCONH(CH<sub>2</sub>)<sub>n</sub>, HS(CH<sub>2</sub>)<sub>n</sub>, H<sub>2</sub>C:CH, or I group (n, m = 1-5) and  
.gtoreq.1 of the other H atoms by C1-5 alkoxy, C2-6 methoxyalkoxy,  
or Cl and (optionally) .gtoreq.1 of the other H atoms by C1-5 alkyl.  
Useful compds. are HiNC<sub>3</sub>H<sub>6</sub>Si(OEt)<sub>3</sub>, H<sub>2</sub>NC<sub>2</sub>H<sub>4</sub>NHC<sub>3</sub>H<sub>6</sub>Si(OMe)<sub>3</sub>,  
H<sub>2</sub>NCONHC<sub>3</sub>H<sub>6</sub>Si(OEt)<sub>3</sub>, HSC<sub>3</sub>H<sub>6</sub>Si(OMe)<sub>3</sub>, H<sub>2</sub>C:CHSi(OMe)<sub>3</sub>, H<sub>2</sub>C:CHSi(OEt)<sub>3</sub>,  
H<sub>2</sub>C:CHSi(OC<sub>2</sub>H<sub>4</sub>OMe)<sub>3</sub>, H<sub>2</sub>C:CHSiCl<sub>3</sub>, and II. Typically the  
fluoroacrylate polymer is selected from homopolymers and copolymers  
of monomers H<sub>2</sub>C:CRCO<sub>2</sub>ZR<sub>1</sub> (R = Me, Et, halomethyl, haloethyl, halo,  
H; R<sub>1</sub> = C1-15 fluoroalkyl; Z = C1-6 divalent hydrocarbon group).  
The **resists** have high adhesivion to substrate surfaces.  
Thus, a soln. contg. .gamma.-aminopropyltriethoxysilane 5, H<sub>2</sub>O 5,

and EtOH 90 parts was spin-coated on a Si wafer and prebaked. A mixt. of 2,2,3,4,4,4-hexafluorobutyl methacrylate 99 and glycidyl methacrylate 1 part was polymd. to obtain a copolymer having a wt. av. mol. wt. of 1.2 .times. 106. A MEK soln. of the copolymer was coated on the precoated wafer, prebaked to form a 0.4-.mu. layer, imagewise irradiated by an electron beam, and developed with a 1.5:98.5 Me iso-Bu ketone-iso-PrOH mixt. No defects due to sepn. of the **resist** layer was obsd. in .gtoreq.2-.mu. line and space **patterns**.

IT 919-30-2  
 (coupling agent, silicon **wafer surfaces**  
**pretreated** with, for coating of fluoroalkyl acrylate  
 copolymer electron-beam **resist** layers for fabrication  
 of semiconductor devices)  
 RN 919-30-2 HCAPLUS  
 CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)



IC ICM G03C001-74  
 ICS B05D005-12; B05D007-24; G03F007-16; H01L021-30  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 ST **photoresist** fluoroalkyl acrylate polymer adhesion; silane  
 coupling agent fluoropolymr **resist**  
 IT Semiconductor devices  
 (coating of fluoroalkyl acrylate copolymer electron-beam  
**resist** layer on silicon **wafer surfaces**  
**pretreated** with silane coupling agent for fabrication of)  
 IT **Resists**  
 (electron-beam, fluoroalkyl acrylate copolymer, coating of, on  
 silicon **wafer surfaces pretreated**  
 with silane coupling agent)  
 IT 919-30-2  
 (coupling agent, silicon **wafer surfaces**  
**pretreated** with, for coating of fluoroalkyl acrylate  
 copolymer electron-beam **resist** layers for fabrication  
 of semiconductor devices)  
 IT 67-63-0, uses and miscellaneous 108-10-1  
 (developer contg., for fluoroalkyl acrylate copolymer  
 electron-beam **resist** coated on silicon **wafers**  
**pretreated** with silane coupling agent)  
 IT 108-83-8 142-82-5, uses and miscellaneous  
 (developer, for fluoroalkyl acrylate copolymer electron-beam  
**resist** coated on silicon **wafers**  
**pretreated** with silane coupling agent)

IT 66396-71-2 86904-68-9 87458-36-4 99936-06-8  
(electron-beam **resist**, coating of, on silicon  
**wafers pretreated** with silane coupling agent  
for fabrication of semiconductor devices)  
IT 7440-21-3, uses and miscellaneous  
(**wafers, treated** with silane coupling agent  
for coating of fluoroalkyl acrylate copolymer electron-beam  
**resist** layers for fabrication of semiconductor devices)

=> d his l44-

(FILE 'HCAPLUS' ENTERED AT 17:19:25 ON 15 MAY 2002)

FILE 'REGISTRY' ENTERED AT 18:05:09 ON 15 MAY 2002

FILE 'HCAPLUS' ENTERED AT 18:06:27 ON 15 MAY 2002

L44 15652 S PHOTOLITHO? OR PHOTO(2A)LITHO?  
L45 70 S L34 AND L44  
L46 55 S L45 AND (L7 OR L15 OR L19)  
L47 7 S L45 AND L15 AND L19  
L48 9 S L45 AND L7 AND L19  
L49 13 S L45 AND L7 AND L15  
L50 11 S (L47 OR L48 OR L49) NOT (L42 OR L43)

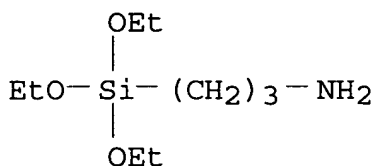
=> d l50 1-11 cbib abs hitstr hitind

L50 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
2001:721614 Document No. 135:249448 Photomasking of photosensitive  
polyimides with organometallic compounds for  
**photolithography** on silicon chips. Munoz Pascual, Francisco  
J.; Dominguez Horna, Carlos (Consejo Superior de Investigaciones  
Cientificas, Spain). Span. ES 2146128 A1 20000716, 9 pp.  
(Spanish). CODEN: SPXXAD. APPLICATION: ES 1995-645 19950331.

AB The process consists of adhesion of a photoresin to a substrate,  
such as Si oxide, using an organosilane, e.g., trimethoxy Pr silyl  
methacrylate (MPTS) or 3-aminopropyl triethoxysilane, silylation by  
submersion of the wafers of Si in a soln. of MPTS in toluene  
combined with .gtoreq.0.5 vol.% water, holding at <90.degree. for  
approx. 4 h, rinsing with MEK, and depositing the polyimide layer by  
centrifuging; photopolymn. of the organosilane to form a  
polysiloxane resulting from contact with moisture and crosslinking  
by photochem. excitation with UV light; producing pos. and neg.  
images depending on the order of the sequence of steps; and  
development by reactive ion etching using an O plasma after  
imidation of the polymer by heating at <400.degree.. The process  
gives pos. or neg. **patterns** with respect to the mask using  
the same photosensitive precursors and depending only on the order  
of exposure and silylation. It can be used for photodefinition of  
polymer layers of any thickness and applied to encapsulation of  
chem. sensors, multichip modules, microelectronic technol.,  
electronic sensors, and integrated optics.



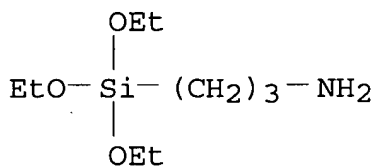
IT 919-30-2, 3-Aminopropyltriethoxysilane  
 (substrate silylation agent; photomasking of photosensitive polyimides with organometallic compds. for **photolithog.** with oxygen plasma reactive ion etching)  
 RN 919-30-2 HCAPLUS  
 CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)



IC ICM H01L021-312  
 ICS G03F007-037; G03F007-038; G03F007-075; G03F007-029; G03F007-36;  
 C08L079-08; C08K005-3417; C08K005-54  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 76  
 ST organosilane silylation photoresin adhesion photomasking; oxygen plasma reactive ion etching **photolithog**  
 IT Sputtering  
 (etching, reactive, oxygen; photomasking of photosensitive polyimides with organometallic compds. for **photolithog.** with oxygen plasma reactive ion etching)  
 IT Silanes  
 (organosilanes, substrate silylation agent; photomasking of photosensitive polyimides with organometallic compds. for **photolithog.** with oxygen plasma reactive ion etching)  
 IT **Photolithography**  
**Photoresists**  
 Silylation  
 (photomasking of photosensitive polyimides with organometallic compds. for **photolithog.** with oxygen plasma reactive ion etching)  
 IT Polyimides, processes  
 Polysiloxanes, processes  
 (photomasking of photosensitive polyimides with organometallic compds. for **photolithog.** with oxygen plasma reactive ion etching)  
 IT Etching  
 (sputter, reactive, oxygen; photomasking of photosensitive polyimides with organometallic compds. for **photolithog.** with oxygen plasma reactive ion etching)  
 IT 7782-44-7, Oxygen, uses  
 (plasma; photomasking of photosensitive polyimides with organometallic compds. for **photolithog.** with oxygen plasma reactive ion etching)  
 IT 919-30-2, 3-Aminopropyltriethoxysilane 2530-85-0  
 (substrate silylation agent; photomasking of photosensitive

polyimides with organometallic compds. for **photolithog.**  
with oxygen plasma reactive ion etching)

L50 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
2001:293627 Document No. 134:289035 Method of **patterning**  
polyamic acid layers. Beilin, Solomon I.; Chou, William T.; Ngo,  
David Dung (Fujitsu Limited, Japan). U.S. US 6221567 B1 20010424, 9  
pp. (English). CODEN: USXXAM. APPLICATION: US 1999-226974  
19990108. PRIORITY: US 1998-PV71417 19980114.  
AB Methods of etching polyamic acid layers and the like are disclosed.  
In exemplary embodiments of the present invention, the polymeric  
acid layer to be etched is alternatively exposed to etchant solns.  
(etchants) and rinse solns., where the etchant solns. are of  
relatively moderate alky. and the rinse solns. have a lower pH than  
the etchant solns. The present invention enables polymeric acid  
layers to be developed with std. basic etchants at relatively  
moderate concns. and at room temp. with little, if any, corrosion to  
any underlying metal layers. The present invention enables the more  
reliable and cleaner spin-spray processing method to be employed,  
thereby significantly increasing yields and reducing overall  
processing costs. The present invention also enables the etching of  
thick layers of polymeric acid without the need for special  
treatments, such as exposure to highly concd. etchant solns. or high  
temp. processing conditions.  
IT 919-30-2, VM 651  
(adhesion promoter; method of **patterning** polyamic acid  
layers)  
RN 919-30-2 HCAPLUS  
CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)



IC ICM G03F007-00  
NCL 430323000  
CC 76-3 (Electric Phenomena)  
ST **photolithog** polyamic acid film etching  
IT Etching  
**Photolithography**  
(method of **patterning** polyamic acid layers)  
IT Polyamic acids  
(method of **patterning** polyamic acid layers)  
IT 919-30-2, VM 651  
(adhesion promoter; method of **patterning** polyamic acid  
layers)  
IT 7440-21-3, Silicon, uses 7631-86-9, Silica, uses  
(method of **patterning** polyamic acid layers)

IT 29319-22-0, PI2611  
(polyamic acid coating; method of **patterning** polyamic acid layers)

IT 97396-58-2, AZ4620  
(pos. **photoresist**; method of **patterning** polyamic acid layers)

L50 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2002 ACS

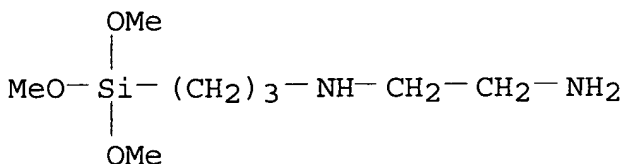
1999:101258 Document No. 130:149546 Novel methods of attaching probes to a solid support and uses thereof. Okamoto, Tadashi; Yamamoto, Nobuko; Suzuki, Tomohiro (Canon Kabushiki Kaisha, Japan). Eur. Pat. Appl. EP 895082 A2 19990203, 43 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-306107 19980731. PRIORITY: JP 1997-207837 19970801; JP 1997-287046 19971020; JP 1998-209923 19980724.

AB Provided is a method of attaching probes to a solid support in a markedly high d. and efficiency. An extremely small amt. of probe is contained within a liq., and droplets of the liq. are delivered to the solid support via an ink jet ejection method, thereby forming spots which contain the probe. Since one or more substances can bind specifically to target probes and said probes are arranged in a large no. on a solid support, the method can be used to swiftly and accurately det. a base sequence of a nucleic acid or detect a target nucleic acid in a sample.

IT 1760-24-3, KBM603 2530-83-8, KBM403  
(novel methods of attaching probes to a solid support and uses thereof)

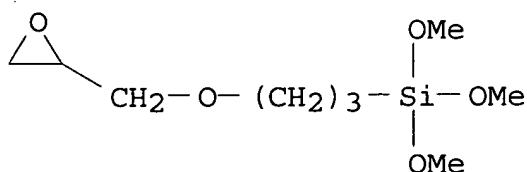
RN 1760-24-3 HCAPLUS

CN 1,2-Ethanediamine, N-[3-(trimethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



RN 2530-83-8 HCAPLUS

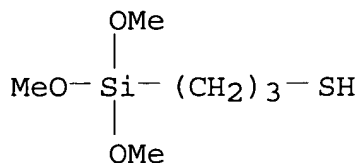
CN Silane, trimethoxy[3-(oxiranylmethoxy)propyl]- (9CI) (CA INDEX NAME)



- IC ICM G01N033-543  
ICS C12Q001-68; C07K017-14; C12N011-14; G01N033-53; G01N033-68  
CC 3-1 (Biochemical Genetics)  
Section cross-reference(s): 9  
IT **Photoresists**  
(UV; novel methods of attaching probes to a solid support and uses thereof)
- IT Phenolic resins, analysis  
(arom. azide **resist**; novel methods of attaching probes to a solid support and uses thereof)
- IT Phenolic resins, analysis  
(novolak, diazonaphthoquinone **resist**; novel methods of attaching probes to a solid support and uses thereof)
- IT Polysulfones, analysis  
(poly(methylene sulfone); radiation decompn. **resist**; novel methods of attaching probes to a solid support and uses thereof)
- IT Isoprenoids  
(polyisoprenoids, cyclized, arom. bisazide **resist**; novel methods of attaching probes to a solid support and uses thereof)
- IT **Photolithography**  
(use in formation of matrix **pattern**; novel methods of attaching probes to a solid support and uses thereof)
- IT 59269-51-1, Polyvinylphenol 75742-13-1  
(DEEP-UV **resist** contg.; novel methods of attaching probes to a solid support and uses thereof)
- IT 25067-05-4, Polyglycidyl methacrylate 203526-64-1, BK 739P  
(DEEP-UV **resist**; novel methods of attaching probes to a solid support and uses thereof)
- IT 80500-54-5, 2-Nitrobenzyl cholate  
(dissoln. suppressant **resist**; novel methods of attaching probes to a solid support and uses thereof)
- IT 1760-24-3, KBM603 2530-83-8, KBM403  
(novel methods of attaching probes to a solid support and uses thereof)
- IT 9011-14-7, Polymethyl methacrylate 25988-32-3, Polymethylisopropenyl ketone 76643-44-2, Polyhexafluorobutyl methacrylate 87842-32-8D, brominated  
(radiation decompn. **resist**; novel methods of attaching probes to a solid support and uses thereof)

L50 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
1998:568281 Document No. 130:8817 Fabrication of colloidal gold micropatterns using **photolithographed** self-assembled monolayers as templates. Liu, Jun-Fu; Zhang, Lin-Gang; Gu, Ning; Ren, Ji-Yun; Wu, Yan-Peng; Lu, Zu-Hong; Mao, Pan-Song; Chen, De-Ying (National Laboratory of Molecular and Biomolecular Electronics, Southeast University, Nanjing, 210096, Peop. Rep. China). Thin Solid Films, 327-329, 176-179 (English) 1998. CODEN: THSFAP. ISSN: 0040-6090. Publisher: Elsevier Science S.A..

- AB This paper provides a new method for the **patterned** metalization of self-assembled monolayers. Colloidal Au micropatterns were formed on **photolithographed** self-assembled monolayers (SAMs) of (3-mercaptopropyl)-trimethoxysilane (MTS) on SiO<sub>2</sub>-coated Si substrates. As confirmed by SEM, the colloidal Au closely replicated the mask features. Atomic force microscopy (AFM) showed that the colloidal Au particles on the unirradiated monolayers of (3-mercaptopropyl)-trimethoxysilane were connected and an almost continuous monolayer of Au nanoparticles was formed. X-ray photoelectron microscopy (XPM) revealed that the -SH terminal groups of the MTS monolayer in the exposed region were oxidized and the self-assembly of colloidal Au onto the unexposed region were through Au-S covalent bonding. The present approach may be applicable to assembly of microelectronic circuits and microbiosensors.
- IT 4420-74-0, (3-Mercaptopropyl)-trimethoxysilane (fabrication of colloidal gold micropatterns using **photolithographed** self-assembled monolayers of (mercaptopropyl)trimethoxysilane on SiO<sub>2</sub>-coated Si substrates as templates)
- RN 4420-74-0 HCAPLUS
- CN 1-Propanethiol, 3-(trimethoxysilyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST colloidal gold micropattern **photolithographed** self assembled silane monolayer
- IT Bond  
(covalent; metalization of self-assembled monolayers of mercaptopropyltrimethoxysilane through covalent bonding of Au colloids to these **photolithographed** layers)
- IT Nanoparticles  
**Photolithography**  
Self-assembled monolayers  
(fabrication of colloidal gold micropatterns using **photolithographed** self-assembled monolayers of (mercaptopropyl)trimethoxysilane on SiO<sub>2</sub>-coated Si substrates as templates)
- IT Surface reaction  
(metalization of self-assembled monolayers of mercaptopropyltrimethoxysilane through covalent bonding of Au colloids to these **photolithographed** layers)
- IT Coating process

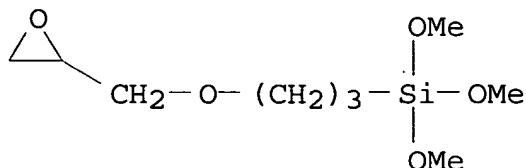
(metalization; metalization of self-assembled monolayers of mercaptopropyltrimethoxysilane through covalent bonding of Au colloids to these **photolithographed** layers)

- IT Biosensors  
(microbiosensors; fabrication of colloidal gold micropatterns using **photolithographed** self-assembled monolayers of (mercaptopropyl)trimethoxysilane on SiO<sub>2</sub>-coated Si substrates as templates in relation to)
- IT Electric circuits  
(microcircuits; fabrication of colloidal gold micropatterns using **photolithographed** self-assembled monolayers of (mercaptopropyl)trimethoxysilane on SiO<sub>2</sub>-coated Si substrates as templates in relation to)
- IT 7440-57-5D, Gold, **surface** bonded, **processes**  
(colloidal; fabrication of colloidal gold micropatterns using **photolithographed** self-assembled monolayers of (mercaptopropyl)trimethoxysilane on SiO<sub>2</sub>-coated Si substrates as templates)
- IT **4420-74-0**, (3-Mercaptopropyl)-trimethoxysilane 7440-21-3, Silicon, processes  
(fabrication of colloidal gold micropatterns using **photolithographed** self-assembled monolayers of (mercaptopropyl)trimethoxysilane on SiO<sub>2</sub>-coated Si substrates as templates)
- L50 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
1997:609956 Document No. 127:285940 Thermosetting electrodeposition coating composition having tackiness for transfer printing and **pattern** formation method using the same. Doi, Yorio; Nishida, Reijiro; Kawai, Kenzo Ro (Kansai Paint Co., Ltd., Japan; Dainippon Printing Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 09235493 A2 19970909 Heisei, 17 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1996-65220 19960228.
- AB The coating compn. contains (A) a resin with OH and an ionic group and (B) a hardener with av. .gtoreq.2 epoxy-contg. functional groups having a cycloaliph. and/or bridged cycloaliph. backbone. The process consists of (1) forming an electrode with a **pattern** of an elec. insulating film on a conductive side of a substrate, (2) forming a releasing layer if necessary, (3) plating a metal, (4) soaking the substrate in the coating compn. to form an electrodeposition film, and (5) adhering a substrate on the coating layer, releasing, and transferring the coating and plating layers. The transfered coating layer is suitable for an etching **resist** mask.
- IT **156637-69-3P**, (.gamma.-Glycidoxypropyl)trimethoxysilane-methyltrimethoxysilane copolymer  
(releasing layer; epoxy resin electrodeposition coating compn. having tackiness for **photolithog.**)
- RN 156637-69-3 HCAPLUS
- CN Silane, trimethoxymethyl-, polymer with trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

CM 1

CRN 2530-83-8

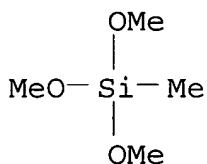
CMF C9 H20 O5 Si



CM 2

CRN 1185-55-3

CMF C4 H12 O3 Si



IC ICM C09D005-44

ICS C25D013-06

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrodeposition coating thermosetting resin tackiness  
**photolithog**; **photoresist** electrodeposition coating  
**pattern** transfer; polyepoxide hardener electrodeposition  
 coating **photolithog**; hydroxy ionic resin thermosetting  
 electrodeposition coating; vinylcyclohexane diepoxide polymer  
 electrodeposition coating

IT Epoxy resins, uses  
 (alicyclic, hardeners; epoxy resin electrodeposition coating  
 compn. having tackiness for **photolithog**.)

IT Epoxy resins, preparation  
 (cycloaliph. epoxide-crosslinked; epoxy resin electrodeposition  
 coating compn. having tackiness for **photolithog**.)

IT Crosslinking agents  
 (cycloaliph. epoxides; epoxy resin electrodeposition coating  
 compn. having tackiness for **photolithog**.)

IT Coatings  
 Electrodeposition  
**Photolithography**  
**Photoresists**

(epoxy resin electrodeposition coating compn. having tackiness

for photolithog.)

- IT Polysiloxanes, preparation  
(releasing layer; epoxy resin electrodeposition coating compn.  
having tackiness for photolithog.)
- IT 196810-60-3P, Bisphenol A-bisphenol A diglycidyl ether-EHPE  
3150-(3,4-epoxycyclohexyl)methyl methacrylate copolymer  
diethanolamine salt  
(crosslinked; epoxy resin electrodeposition coating compn. having  
tackiness for photolithog.)
- IT 196810-57-8P, Bisphenol A-bisphenol A diglycidyl ether-EHPE 3150  
copolymer diethanolamine salt  
(cycloaliph. epoxide-crosslinked; epoxy resin electrodeposition  
coating compn. having tackiness for photolithog.)
- IT 128703-08-2P, (3,4-Epoxy cyclohexyl)methyl methacrylate homopolymer  
196810-62-5P, 3,4-Epoxy tetrahydrobenzyl alcohol-HMDI isocyanurate  
copolymer 196810-65-8P  
(hardeners; epoxy resin electrodeposition coating compn. having  
tackiness for photolithog.)
- IT 25086-25-3, EHPE 3150  
(hardeners; epoxy resin electrodeposition coating compn. having  
tackiness for photolithog.)
- IT 156637-69-3P, (.gamma.-Glycidoxypropyl)trimethoxysilane-  
methyltrimethoxysilane copolymer 196810-67-0P,  
(.gamma.-Hydroxypropyl)trimethoxysilane-maleic anhydride-(.gamma.-  
methacryloxypropyl)trimethoxysilane-methyltrimethoxysilane copolymer  
(releasing layer; epoxy resin electrodeposition coating compn.  
having tackiness for photolithog.)

L50 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2002 ACS

1997:299472 Document No. 126:285347 High-resistance black  
radiation-sensitive resin composition, black hardened film, and  
black image formation. Koyanagi, Takao; Kato, Yoshinori; Imaizumi,  
Naoko; Kitaori, Tomoyuki; Futamura, Nobuyuki; Fukunaga, Masanori  
(Nippon Kayaku Kk, Japan). Jpn. Kokai Tokkyo Koho JP 09054431 A2  
19970225 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1995-232126 19950818.

AB The title resin compn. contains a radiation-sensitive resin contg. a  
radiation-crosslinkable compd. and/or a resin and an optional other  
resin, Ti black **surface treated** with a silane  
compd., and optionally a photopolymer. initiator and an org. pigment  
obtained by mixing carbon black with other colorant to make black.  
A black hardened film obtained by using the compn. and a black  
image-forming method by photolithog. using the compn. are  
also claimed. The compn. useful in prepn. of a black matrix shows  
high resistance, photosensitivity, light-shielding properties, and  
dispersion stability. Thus, a radiation-sensitive resin compn. was  
prepd. by mixing .gamma.-glycidoxypropyltrimethoxysilane-treated Ti  
black with a compn. contg. DPHA (radiation-crosslinkable resin), Me  
methacrylate-methacrylic acid-benzyl methacrylate-2-hydroxyethyl  
methacrylate copolymer, and photopolymer. initiators.

IT 2530-83-8

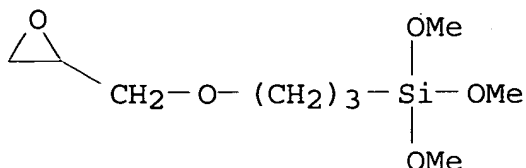
(high-resistance radiation-sensitive resin compn. for black image



formation)

RN 2530-83-8 HCAPLUS

CN Silane, trimethoxy[3-(oxiranylmethoxy)propyl]- (9CI) (CA INDEX NAME)



IC ICM G03F007-004

ICS C08K009-06; C08L101-00; C09D005-00; C09D007-12; C09D201-00; G02B005-20; G02F001-1335; G03F007-027; H01J009-227

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37

ST radiation sensitive black resin high resistance; **resist**

radiation sensitive black image

IT **Resists**

(radiation-sensitive; high-resistance radiation-sensitive resin compn. for black image formation)

IT **2530-83-8** 3388-04-3, .beta.-(3,4-Epoxy cyclohexyl)ethyltrimethoxysilane 144113-99-5, Titanium Black 13R

(high-resistance radiation-sensitive resin compn. for black image formation)

L50 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2002 ACS

1996:376423 Document No. 125:99862 Planar compatible polymer technology for packaging of chemical microsensors. Munoz, J.; Bratov, A.; Mas, R.; Abramova, N.; Dominguez, C.; Bartroli, J. (Centro Nacional Microelectronica-CSIC, Bellaterra, 08193, Spain). J. Electrochem. Soc., 143(6), 2020-2025 (English) 1996. CODEN: JESOAN. ISSN: 0013-4651.

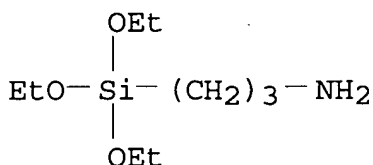
AB By applying special thick film **photolithog.** it is possible to realize a highly automative ion-sensitive field effect transistor (ISFET) packaging at the wafer level. In this paper two approaches **based on photolithog. processing** of encapsulating layers are presented. A lift-off method of com. thermo-curable encapsulants has been investigated, as well as direct photopolymer. of UV-curable encapsulant compns. contg. either epoxy acrylate or polyurethane acrylate oligomers together with monomers and photoinitiators. Lift-off has been developed using either thin or thick **photoresist** sacrificial layers. The best compatibility implies thick photosensitive polyimide layers as a sacrificial **photoresist** together with the encapsulant material based on alumina-filled epoxy. However, better results are obtained by using photopatternable encapsulant polymers that permit

application of thin or thick polymer layers on a wafer substrate contg. ISFET chips. Windows over the gate region and contact pads are opened by exposure to UV light in a std. mask aligner system. Compns. based on epoxy acrylate oligomers are proved to be more reliable in a packaging process. Lifetime of encapsulated micro-sensors for pH measurements is presented.

IT 919-30-2, 3-Triethoxysilyl-1-propylamine  
(silylating agent; highly automative ion-sensitive field effect transistor packaging at wafer level by special thick film **photolithog.**)

RN 919-30-2 HCAPLUS

CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 36, 76

ST insulating ISFET packaging microelectronics sacrificial **photoresist**; thick film **photolithog** chem  
microsensor packaging; encapsulated microsensor pH ISFET insulating packaging

IT Polyimides, uses  
(thick photosensitive polyimide layers as sacrificial **photoresist** in ISFET packaging at wafer level)

IT Transistors  
(field-effect, ion-selective, highly automative ion-sensitive field effect transistor packaging at wafer level by special thick film **photolithog.**)

IT **Lithography**  
(**photo-**, highly automative ion-sensitive field effect transistor packaging at wafer level by special thick film **photolithog.**)

IT **Resists**  
(**photo-**, **photoresist** sacrificial layers in ISFET packaging at wafer level by special thick film **photolithog.**)

IT 7440-21-3, Silicon, uses 7631-86-9, Silica, uses 12033-89-5, Silicon nitride (Si<sub>3</sub>N<sub>4</sub>), uses  
(highly automative ion-sensitive field effect transistor packaging at wafer level by special thick film **photolithog.**)

IT 97396-58-2, AZ4620 179095-27-3, HPR 506  
(**photoresist**; **photoresist** sacrificial layers in ISFET packaging at wafer level by special thick film **photolithog.**)

```
(resist; photoresist sacrificial layers in
ISFET packaging at wafer level by special thick film
photolithog.)
```

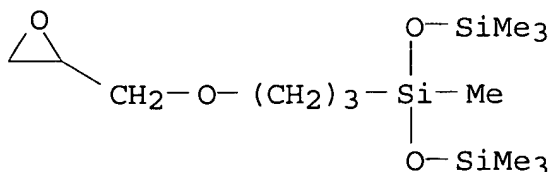
IT 919-30-2, 3-Triethoxysilyl-1-propylamine 2530-85-0  
(silylating agent; highly automative ion-sensitive field effect  
transistor packaging at wafer level by special thick film  
photolithog.)

1995:1002097 Document No. 124:101674 A top-surface imaging approach based on the light-induced formation of dry-etch barriers. Schaedeli, U.; Hofmann, M.; Tinguely, E.; Muenzel, N. (Materials Research, Ciba-Geigy Inc., Marly/Fribourg, 1723, Switz.). ACS Symp. Ser., 614 (Microelectronics Technology), 299-317 (English) 1995. CODEN: ACSMC8. ISSN: 0097-6156.

AB It is believed that optical lithog. will continue to play an important role for the manufg. of future generation IC devices. **Surface imaging processes** might be required to overcome the small depth of focus assocd. with new high numerical aperture exposure tools. Our new concept is based on the light induced formation of sites for the fixing of reactive monomers in the top zones of a highly absorbing **resist** film. These sites, which typically consist of photolytically generated Broensted acid or radicals, are able to oligomerize silicon-contg., reactive monomers during a baking step. The net result is the formation of a silicon gradient in the top zone of the exposed **resist** film, which subsequently acts as a dry etch barrier. Neg. tone images were obtained by exposing **resist** films, mainly composed from a linear matrix polymer, a sulfonium salt type photoacid generator, and silicon-contg. epoxy monomers, with light of 193 nm or 254 nm wavelength.

IT 7422-52-8 (top-surface imaging of **photoresists** based on photooligomerization of silicon contg. monomers)

CN	Trisiloxane, 1,1,1,3,5,5,5-heptamethyl-3-[3-(oxiranylmethoxy)propyl]- (9CI) (CA INDEX NAME)
----	--



ST surface imaging **photoresist** photooligomerization silicon

monomer

IT Etching  
(top-surface imaging of **photoresists** based on  
photooligomerization of silicon contg. monomers)

IT Polymerization  
(oligomerization, photochem., top-surface imaging of  
**photoresists** based on photooligomerization of silicon  
contg. monomers)

IT **Lithography**  
**Resists**  
(**photo-**, top-surface imaging of **photoresists**  
based on photooligomerization of silicon contg. monomers)

IT 2362-10-9P 76104-14-8P 90492-23-2P 101667-50-9P 162546-51-2P  
172667-45-7P  
(top-surface imaging of **photoresists** based on  
photooligomerization of silicon contg. monomers)

IT 172667-46-8P  
(top-surface imaging of **photoresists** based on  
photooligomerization of silicon contg. monomers)

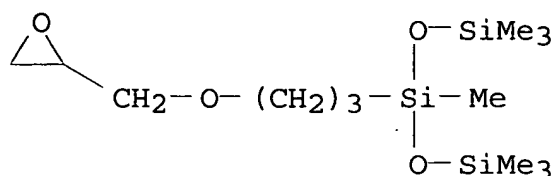
IT 126-80-7, 1,3-Bis(3-glycidyloxypropyl)tetramethyldisiloxane  
4515-14-4 **7422-52-8** 18415-68-4 65842-29-7 90492-24-3  
162546-50-1 162546-52-3 162546-55-6 162546-56-7  
(top-surface imaging of **photoresists** based on  
photooligomerization of silicon contg. monomers)

L50 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
1995:672250 Document No. 123:270507 New top surface imaging approach  
based on the light induced built-up of dry etch barriers.  
Schaedeli, U.; Hofmann, M.; Tinguely, E.; Munzel, N. (Materials  
Research, Ciba-Geigy Corp., Fribourg, 1723, Switz.). Polym. Mater.  
Sci. Eng., 72, 106-7 (English) 1995. CODEN: PMSEDG. ISSN:  
0743-0515.

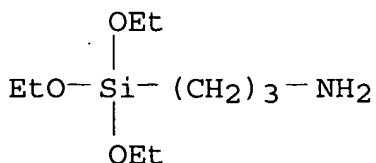
AB A top surface imaging approach, which yields neg. tone images of the  
mask, is presented. It is based on the light induced generation of  
mol. filters in the top zones of the **resist** film, which  
are able to retard silicon contg. reactive monomers by rapid  
oligomerization. The resulting dry etch barriers allow for a  
**pattern** transfer down to the substrate by means of oxygen  
plasma etching.

IT **7422-52-8**  
(top surface imaging approach which yields neg. tone images of  
mask based on light induced built-up of dry etch barriers)

RN **7422-52-8** HCAPLUS  
CN Trisiloxane, 1,1,1,3,5,5,5-heptamethyl-3-[3-(oxiranylmethoxy)propyl]-  
(9CI) (CA INDEX NAME)



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- ST top surface imaging photomask etching **photolithog**
- IT **Lithography**  
**Resists**  
(**photo-**, top surface imaging approach which yields neg. tone images of mask based on light induced built-up of dry etch barriers)
- IT 126-80-7, 1,3-Bis(3-glycidyloxypropyl)tetramethyldisiloxane  
4515-14-4 **7422-52-8** 18415-68-4 162546-52-3  
162546-55-6 162546-56-7  
(top surface imaging approach which yields neg. tone images of mask based on light induced built-up of dry etch barriers)
- L50 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
1993:69701 Document No. 118:69701 Manufacture of color filters for liq.-crystal display devices. Iwamoto, Masao; Kimura, Kuniko (Toray Industries, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 04151604 A2 19920525 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-277249 19901015.
- AB The manufg. process comprises the steps of: forming a laminate contg. (1) a transparent substrate, (2) a **patterned resist**, (3) a dyeable, (4) a photosensitive, and (5) a Si-rubber layer; forming the **patterned** apertures by selectively etching (3)/(4) **photolithog.**; forming the red/green/blue pixel elements by dying (2) exposed in the apertures; and removing the **patterned** (3)/(4). The filter has an improved surface integrity and a superior color rendering.
- IT **919-30-2**, A 1100  
(color filters from, for liq.-crystal displays, manuf. of)
- RN 919-30-2 HCAPLUS
- CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)



IC ICM G02B005-20

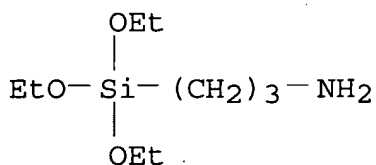
ICS G09F009-30  
 CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 IT 919-30-2, A 1100 75882-39-2, Sumiresin PR 50235  
 (color filters from, for liq.-crystal displays, manuf. of)

L50 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
 1992:601695 Document No. 117:201695 **Photolithography** on microstructured surfaces using photosensitive polyimide. Munoz, J.; Van Hal, R. E. G.; Bergveld, P. (MESA Res. Inst., Univ. Twente, Enschede, 7500 AE, Neth.). Sens. Mater., 3(6), 345-58 (English) 1992. CODEN: SENMER. ISSN: 0914-4935.

AB Improvements in **patterning** microstructured surfaces by photosensitive polyimides as an alternative to std. pos. and neg. **photoresists** are presented. Two different types of polyimide **photoresists** are used to check step coverage and image transfer to specific test substrates. These test substrates contain mesalike steps, which can be seen as a general configuration of 3-dimensional Si sensors. Step coverage is characterized by leakage-current measurements and scanning electron microscope (SEM) spectroscopy. Thin photosensitive polyimide layers showed better step coverage and resoln. than std. **photoresist**. Thick photosensitive polyimide showed good planarization properties when 2 layers were used. However, it is necessary to use a combination of wet and dry etching to obtain good resoln.

IT 919-30-2, 3-Aminopropyl triethoxy silane  
 (silylating agent, for photosensitive polyimide in **photolithog.**)

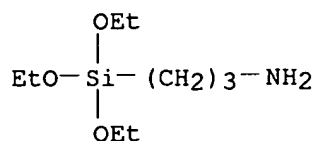
RN 919-30-2 HCAPLUS  
 CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 IT Polyimides, uses  
 (photosensitive, **photolithog.** on microstructured surfaces using)  
 IT **Lithography**  
 (photo-, on microstructured surfaces using polyimide)  
 IT **Resists**  
 (photo-, photosensitive polyimides as, **photolithog.** on microstructured surfaces using)  
 IT 9077-64-9, Waycoat IC 97445-31-3, S 1400-31  
 (lithog. **patterning** of microstructured surfaces by, photosensitive polyimides as alternative to)

- IT 126904-05-0, Selectilux HTR 3-200 135153-00-3, Probimide 412  
(**photolithog.** on microstructured surfaces using)
- IT 999-97-3, Hexamethyl disilazane  
(silylating agent, for neg. **photoresist** in  
**photolithog.**)
- IT 919-30-2, 3-Aminopropyl triethoxy silane  
(silylating agent, for photosensitive polyimide in  
**photolithog.**)

CI COM  
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN\*, BIOBUSINESS, BIOSIS,  
BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CHEMCATS,  
CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB, DETHERM\*, EMBASE, HODOC\*,  
HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NIOSHTIC, PIRA,  
PROMT, RTECS\*, SPECINFO, TOXCENTER, USPAT2, USPATFULL  
(\*File contains numerically searchable property data)  
Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
(\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

7755 REFERENCES IN FILE CA (1962 TO DATE)  
1179 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
7772 REFERENCES IN FILE CAPLUS (1962 TO DATE)  
92 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=>



L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS

RN 919-30-2 REGISTRY

CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Propylamine, 3-(triethoxysilyl)- (6CI, 8CI)

OTHER NAMES:

CN (.gamma.-Aminopropyl)triethoxysilane

CN .gamma.-Triethoxysilylpropylamine

CN 3-(Triethoxysilyl)-1-propanamine

CN 3-(Triethoxysilyl)-1-propylamine

CN 3-(Triethoxysilyl)propanamine

CN 3-(Triethoxysilyl)propylamine

CN 3-Aminopropyltriethoxysilane

CN 3-APTES

CN A 0750

CN A 1100

CN A 1100 (coupling agent)

CN A 1102

CN A 1102 (silane derivative)

CN A 1112

CN A 1112 (coupling agent)

CN AGM 3

CN AGM 9

CN AMEO

CN Aminopropyltriethoxysilane

CN AP 1690

CN APS

CN APS (coupling agent)

CN APS-E

CN APTES

CN DS-AMEO

CN Dynasytan 1203

CN Dynasytan AMEO

CN Dynasytan AMEO-T

CN GF 93

CN Hydrosil 2627

CN KBE 903

CN KH 550

CN NB 1114

CN NUCA 1100

CN Prosil 220

CN Prosil 221

CN S 330

CN Sila-Ace S 330

CN Silane AMG 9

CN Silicone A 1100

CN Silquest A 1100

CN Silquest A 1102

CN Triethoxy(.gamma.-aminopropyl)silane

CN Triethoxy(3-aminopropyl)silane

CN TSC 202

CN TSL 8331

CN Unisilan 13

CN VM 651

CN VM 651 (coupling agent)

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for  
DISPLAY

FS 3D CONCORD

DR 12738-50-0, 131641-77-5, 60000-97-7, 96726-79-3, 106096-79-1, 71618-18-3,  
143178-71-6, 86836-28-4, 159778-17-3, 204987-58-6

MF C9 H23 N O3 Si